

RAILWAY

# TRACK and STRUCTURES

October 1954

One of Five Specialized Railway Age Publications

## RIGHT NOW - AS ESSENTIAL AS THE USE OF DIESEL POWER

Issue:

How to Reclaim  
Ballast?

More Coverage  
Conventions

Renewal Gives  
Long-Life Bridge

—A Double-  
Track Plow

Photo—  
on 35



Chemical control of unwanted vegetation is as essential to Railroads at this time as the use of Diesel Power plants. Cost per mile is the deciding factor in both.



READE MANUFACTURING COMPANY, INC.

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WORKS: JERSEY CITY • CHICAGO • KANSAS CITY • MINNEAPOLIS

BIRMINGHAM • STOCKTON



## the KERSHAW SPOT TAMPER

Kershaw Manufacturing Company proudly announces the development of the Kershaw Spot Tamper, a compact, speedy machine which combines the work load of a Jack-All and a multiple tamper. Check these important features found ONLY on the Kershaw Spot Tamper:

- ★ Equipped with hydraulic jacks to permit the raising of track and the catching off of the tie in one simple operation.
- ★ Completely hydraulically operated using both the hydraulic and vibratory principles.
- ★ Provided with four independent tamping heads which may be operated singularly, in pairs or all four at the same time.
- ★ Tamping bars actually go under tie and are only two inches apart during tamping operation.
- ★ Tamps through switches.
- ★ Provides raise from 0 to 8 inches.
- ★ Priced reasonably to fit any railroad budget.

*Now . . . more than ever . . .  
Recognize This Symbol  
of Leadership . . .*

**KERSHAW**  
MANUFACTURING CO. INC.  
MONTGOMERY ALABAMA  
  
U.S.A.



## This winter economize with Winter King Switch Heaters

Now is a good time to plan for economical switch care during the snowy days ahead. And Bethlehem's Winter King Switch Heater can fit right in with your plans.

The Winter King is first of all a simple, compact and easy-to-handle unit that fits between the ties and under the rail base. Its dependable orange flame is easily adjusted for height, and the fuel chamber is easily refilled while the unit is in operation. The 1½-gal capacity will keep the heater burning continuously for from nine to fifteen hours.

In addition to low first cost, the Winter King offers economy through almost negligible maintenance requirements. Being self-contained, they are practical for any location. One man can care for 100 heaters, if they aren't too widely scattered.

For best results, Winter Kings should be set out three to a side for 10-ft switches, four for 16½-ft, and proportionately more for longer ones. Center the opening between stock rail and point and adjust the flame by increasing or decreasing the opening in the top of the unit.

Hundreds of thousands of Winter Kings will be pitting their friendly flames against snow and ice this winter. A Bethlehem representative will be glad to give you full details on the Winter King story. He can be reached through our nearest sales office or at our general offices in Bethlehem, Pa.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.  
On the Pacific Coast Bethlehem products are sold by  
Bethlehem Pacific Coast Steel Corporation  
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**BETHLEHEM STEEL**

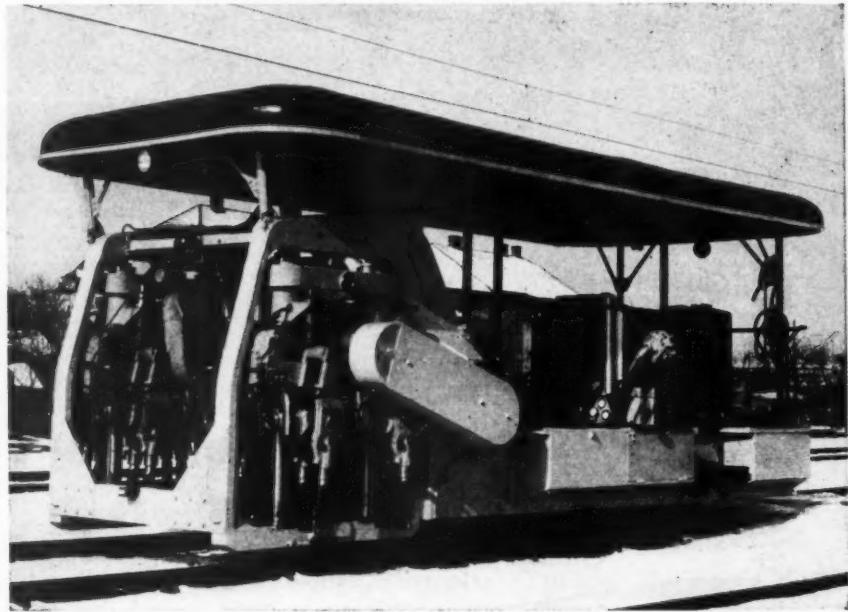


# PLASSER PRESENTS

## HIGH CAPACITY HYDRAULIC TAMPING MACHINE

*"One man  
tamps 1100  
feet an hour"*

— Canadian  
M/W Engineer



This official further reports: ". . . The total time to tamp 11 rails with 24 ties to panel was 22 minutes for one insertion . . . it would appear that the machine was capable of tamping 1100 feet of track (per hour) if given complete freedom to work. To date the track has stood up well . . ."

- Good trackability; rubber-mounted axles dampen vibration.
  - Diesel-powered compressor; quiet operation.
  - One-man operation; exceptionally high performance.
  - On or off the track in two minutes; more work time in busy territory.
- Get all the facts about this advanced tamping machine that out-performs and out-saves all others.

The thoroughly-proved Plasser Hydraulic Tamper is designed on the unique principle of the independent working of each tool pair with pre-arrangement of tool pair opening, in connection with hydraulic damping tongs. It guarantees a 100% quality tamping job because:

- It produces uniform ballast compacting—always.
- Tamping pressure at joints and the high rail on curves is automatically increased.
- Adjustment for deep or ordinary tamping may be made while the machine is operating.
- Entire weight of machine rests upon the already-tamped track.

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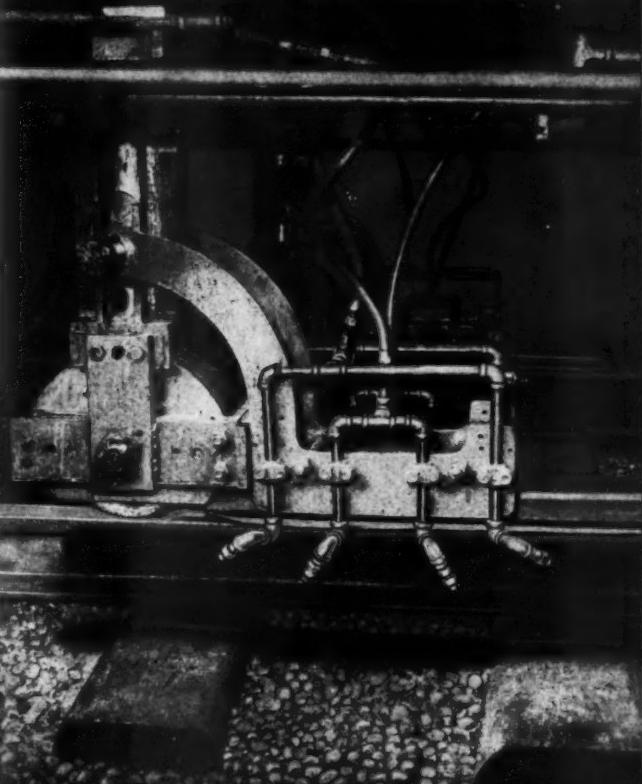
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RAILWAY TRACK and STRUCTURES



## 2 sure *Nalco* ways

TO PROTECT THE RAILROAD

### *Nalco*

#### WEED and BRUSH CONTROL

Nothing beats Nalco Chemicals for controlling weeds, brush and grass all season long.

There's an added advantage, too — Nalco assures the most economical application. With tank car lots of chemical you get free use of a modern Nalco spray car that gives precise dosage exactly where you want it on the right-of-way. And in yards, or other congested areas, Nalco's on-track or off-track mechanical spreaders give excellent distribution of granular H-174. Packaging in 100 pound fibre drums assures convenient handling of this effective herbicide.

Your Nalco Representative has full details . . . or write direct.

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SPRAY SERVICES DEPARTMENT

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P. O. Box 5444, Huntington, West Virginia

In Canada: Alchem Limited, Burlington, Ontario

### *Nalcote*

#### RAIL and RAIL FASTENING ANTI-CORROSION CONTROL

You furnish only the work train and crew — Nalco provides the superior asphalt-base *Nalcote* coating, the special *Nalcote* Spray Cars and the experienced operators.

The results? Up to 140 miles of track per day protected against corrosion from mid-point of rail head to outer edges of tie plates. All vulnerable metal is covered with a uniform coating — even spikes, bolt heads, angle bars and anchors.

The cost? Usually no more than the cost of manually painting angle bars alone.

*Nalco*®

PRODUCTS . . . Serving the Railroads through Practical Applied Science



## One of the 160 Uses of CONCRETE on Railroads

NO. 33 OF A SERIES

This parking deck over the Nashville, Chattanooga & St. Louis Railway in Atlanta, Ga. was built with precast-prestressed concrete girders and channel deck slabs. The channel deck slabs averaged 4 ft. wide x 23 ft. 5 in. long. They rested on T-shaped girders averaging 18 ft. long x 2½ ft. deep. This type of construction was fast and economical.

Prestressed concrete parking decks are just one of the more than 160 uses for portland cement and concrete which enable American railroads to improve service and save time and money. The moderate first cost of such improvements—plus their long life and low maintenance cost—result in true *low annual cost*. This saves money for other items.

### PORTLAND CEMENT ASSOCIATION

33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

The NEW  
NORDBERG

Tamping  
Power  
Jack



**One Man Operation to Raise Track  
and Tamp Key Ties at Lifting Points**

*Here is another new Nordberg machine that will reduce your track maintenance costs . . .*

*The Nordberg Tamping Power Jack combines many of the features of Nordberg's well known Power Jack with those of its automatic Gang Tamper into a self-propelled machine which raises track and tamps key ties at lifting points.*

*The Nordberg Tamping Power Jack has two independently operated hydraulic rams which can accomplish a lift on either or both rails. The manually controlled tamping head carries four tamping bars, two inside of each rail, assuring solid tamping of the key ties.*

*Practically every part of the machine, including the tamping element, is contained inside the wheel gage so that it can be used at station platforms, in ballasted bridges and at any points of restricted side clearance. This feature also affords an excellent view of the rail to the man sighting the track.*

*A cross level and sighting targets, as well as a power actuated hydraulic set-off arrangement are built-in features of the Tamping Power Jack.*

*For further details on the new Nordberg Tamping Power Jack, write for your copy of Bulletin 259.*

**NORDBERG MFG. CO., Milwaukee, Wisconsin**

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R256

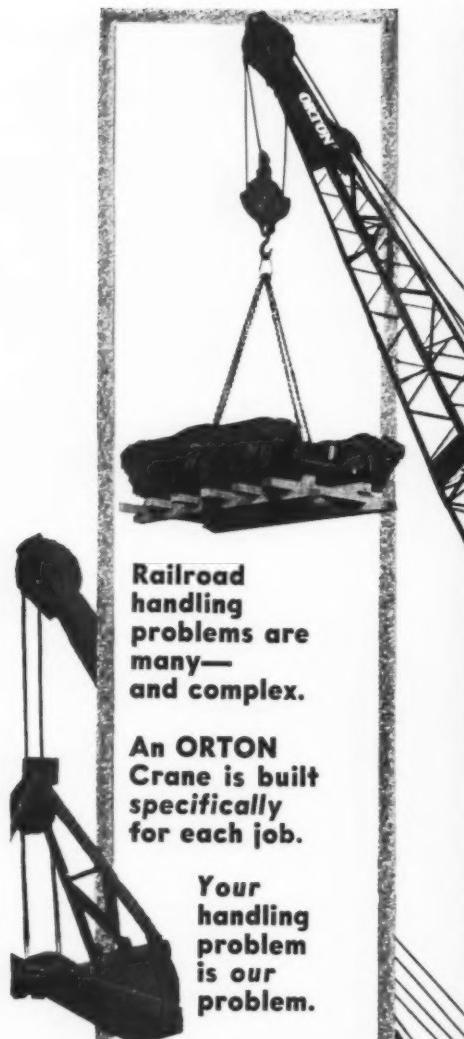


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*"Mechanical Muscles"*

ADZING MACHINE • TIE DRILL • RAIL DRILL • RAIL GRINDERS • CRIBEX® • BALLAST ROUTER • TRACKSHIFTER • DSL® YARD CLEANER • BALLASTEX® • SCREENEX® • TAMPERING JACK • GANG TAMPER • POWER JACK • TRAKLINER • HYDRAULIC and MECHANICAL SPIKE PULLERS • SPIKE HAMMER • POWER WRENCH • GANDY-TIE PULLER and INSERTER • DUN-RITE® GAGING MACHINE



**NORDBERG**



Railroad  
handling  
problems are  
many—  
and complex.

An ORTON  
Crane is built  
specifically  
for each job.

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We would  
like to work  
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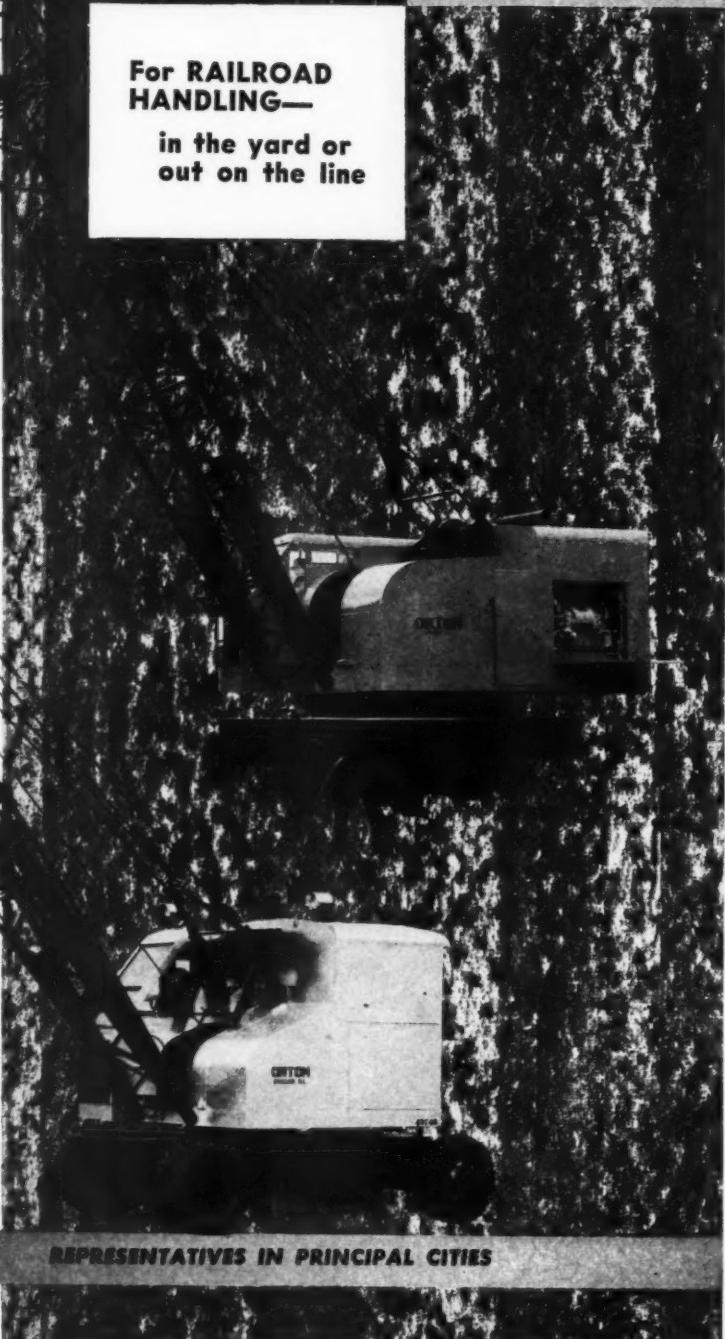
# ORTON

*Torque-Control*

DIESEL CRANES

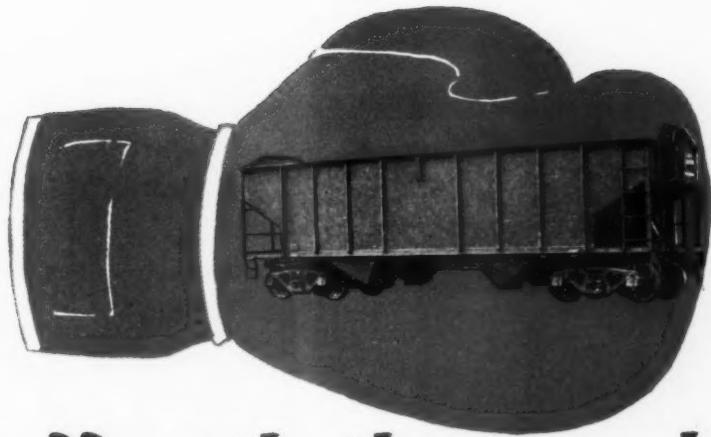
For RAILROAD  
HANDLING—

in the yard or  
out on the line



REPRESENTATIVES IN PRINCIPAL CITIES

only  
**WESTERN**  
**BUMPING**  
**POSTS...** "roll with the punch"

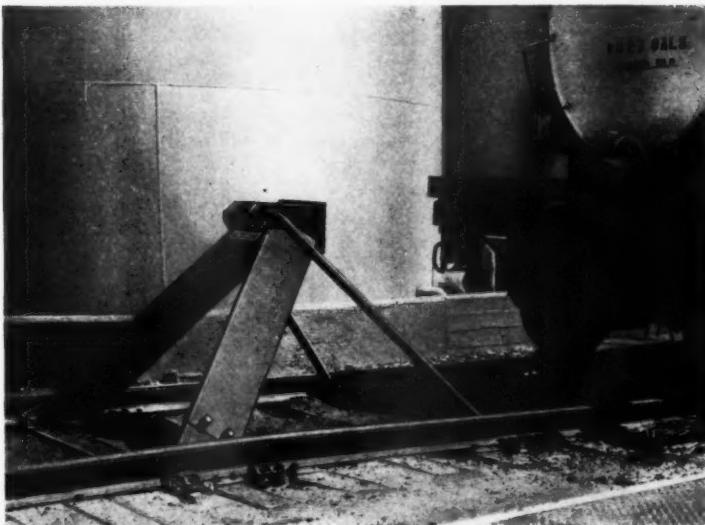


**FREIGHT CAR POST**

**Model 30**

Ability to roll with the punch is the difference between a knockout blow and just another jab. The exclusive shoe castings on Western Bumping Posts clamp around the rails and perform this shock-absorbing function. When struck a severe blow, they slide or "roll with the punch" . . . only a few inches . . . and dissipate the remaining force that usually breaks ordinary posts. More effective. Fewer parts to replace.

Two men—one wrench—less than one hour to complete installation. No holes to drill. No excavations.



**WESTERN**  
**CAR STOPS . . . where heavyweights**  
***are not required***

Semi-portable, these Car Stops clamp equally well to new or worn rails. Take only minutes to install. Require only 16½" of track space. Curved design lifts wheels on contact, absorbing major impact.

WRITE FOR BULLETIN NO. 1015

6644



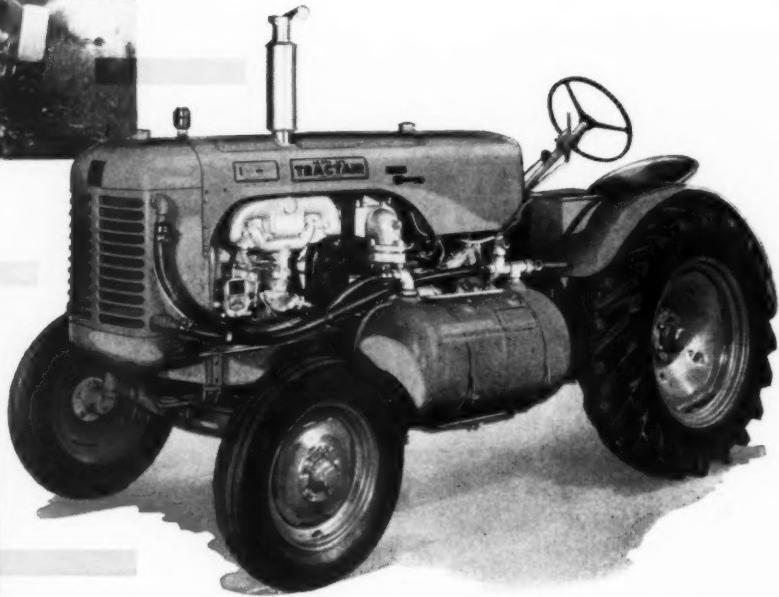
**WESTERN RAILROAD SUPPLY COMPANY**

*Maintenance-of-Way Division*

**2400-2434 South Ashland Avenue • Chicago 8, Illinois**

IN CANADA: Melville Machinery Co., Ltd., Montreal 3, Que. • T. S. Taylor Machinery Co., Ltd., Winnipeg 12, Man. • Simson-Maxwell, Ltd., Vancouver

One of a series of ads featuring new WESTERN products formerly supplied by BUDA



## *Now You Can Spot Tamp ...Quickly and Easily*

... the extra power of Le Roi Tractair  
lets you do faster, better work

SUPERIOR track — that is, a better road bed — calls for good spot tamping. Le Roi with its redesigned Tractair unit, giving you 125 cfm instead of 105 cfm, makes it easy to tamp this superior way.

You see, Tractair's extra capacity gives a greater margin of reserve air than ever before, in operating four, Cleveland C10T, heavy-duty tie tampers. And Cleveland C10T heavy-blow tampers are easy to handle — have a fast, hard-hitting blow that lets your men do a thorough job of tamping in a much shorter time.

You not only save time and money, but you also get a smoother track — one that will stand up

longer under the heavy, fast trains of today.

And you can use your Le Roi Tractair, a combination 42-hp wheel tractor and 125-cfm compressor, for many other jobs such as: Handling off-season work for B&B, Signal, T&T, and Water Service Departments. Stockpiling ballast, cinders, and other materials. Driving spikes, breaking pavement. Driving moil points for grouting. Ditching, light grading, and mowing.

The new Tractair can help you reduce the cost of your M. of W. jobs. Write to our Railroad Sales Department, 327 South LaSalle Street, Chicago 4, Illinois, or to us for latest literature.

T-36

# LE ROI



Division of Westinghouse Air Brake Co.



PORTABLE AIR COMPRESSORS



TRACTAIR



STATIONARY AIR COMPRESSORS

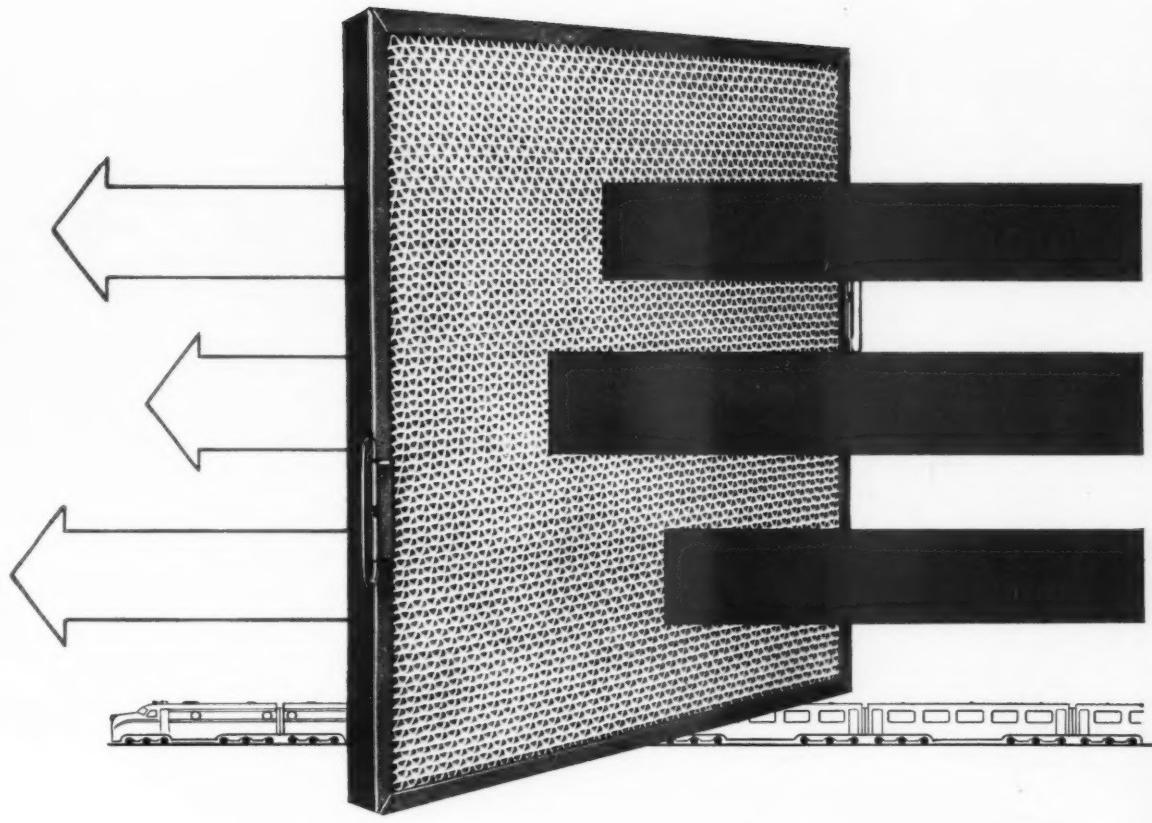


AIR TOOLS



ENGINES

Milwaukee 1, Wisconsin  
Manufacturers of Cleveland Air Tools



## Cut maintenance, increase engine life with Esso AIRFIL® Coating Oil

Esso's new AIRFIL Coating Oil for diesel engine air filters has such great dirt pick-up qualities that it can substantially cut maintenance costs and increase engine life. This is possible because of the reduction in abrasive

wear, lessening the need for replacements of engine parts. You, too, can profit from these benefits by using Esso AIRFIL Coating Oil in diesel air intake filters, and in air-conditioning filters.

### Esso AIRFIL COATING OIL offers three important advantages:

- 1. Easy to apply...won't drip off.** In liquid form when hot, it may be applied quickly in the desired quantity, while at normal temperatures, it is a gel-like solid that won't run off.
- 2. Superior wicking qualities** mean a continually fresh surface is presented to the air. Successive layers of dust are rapidly wetted, keeping dirt-retaining efficiency at a maximum.
- 3. Insoluble in water...** won't emulsify, and so resists removal by rain or snow, yet it can be removed quickly by hot detergent wash or steam blast.

**Esso offers a complete line of dependable railroad products.** Valuable years of experience in research and development, combined with continual testing on the road and in the lab, stand back of the outstanding performance of Esso Railroad products.



### RAILROAD PRODUCTS

For data sheet regarding specifications of AIRFIL Coating Oil, write to Esso Standard Oil Company, Railroad Sales Division, 15 West 51st Street, New York 19, N. Y.



GEARED TO PROGRESS  
**PRI**  
MEMBER



# SPENO

## BALLAST CLEANING and RAIL GRINDING SERVICE

The exclusive SPENO Method of Ballast Cleaning and the SPENO Rail Grinding Train have proved themselves to be time, cost, and maintenance savers for our contractual clients.

You may contract for one or both of these services—secure that you have joined company with many other outstanding and forward looking railroads.

Write today for future availabilities of equipment.

*Just Ask the Railroads  
That have used us!*



FRANK SPENO RAILROAD BALLAST CLEANING CO., INC.

306 North Cayuga St., Ithaca, N. Y.



*Look!  
No weeds.*

Weed Control is  
no chore...when  
you use new

EFFECTIVE...ECONOMICAL  
**UREABOR**  
WEED and GRASS KILLER



Applications of UREABOR are almost effortless

**NOTHING TO MIX — NO WATER TO HAUL**

There's no easier way to end weeds for a season or longer! That's why UREABOR has been such an instantaneous success with all types of industry. You, too, will want the effective and lasting destruction of plant-life offered by this newest addition to our line of nonselective herbicides.

UREABOR is a granular urea-borate combination in dust-free form for fast, easy application at low rates. This chemical destroys weeds and grasses through their root systems. Its residual action, preventing regrowth for long periods, helps hold man-hours for "grassing" to a minimum.

UREABOR has desirable features. It's concentrated, nonflammable, and nonpoisonous when used as directed. Easy to apply—just a man with a special PCB Spreader can be effective anywhere.

*Write today for literature!*

*Dry application—like this—destroys  
weeds and grass...prevents regrowth  
for a season, or longer!*

*Special Spreader now available  
for fast, easy application ...*

The PCB Spreader applies UREABOR to best advantage, at prescribed low rates. It holds enough UREABOR to treat 1250 to 2500 sq. ft. without refilling—weighs a mere 6 lbs. Available now for just \$10.75 delivered—anywhere in the U.S.A.



AGRICULTURAL SALES DEPARTMENT  
**United States Borax & Chemical Corporation**

PACIFIC COAST BORAX COMPANY DIVISION  
630 SHATTO PLACE, LOS ANGELES 5, CALIFORNIA



## Fast, Economical Trestle Construction with Armco Steel Pipe Piling

### Steel Pile Trestle Construction

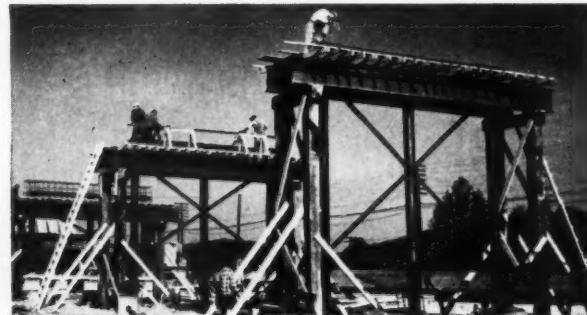
**SAVES TIME  
SAVES FORMWORK  
SAVES MATERIALS**

The three structures illustrate some of the advantages of trestle construction with Armco Steel Pipe Piling. See how the Armco Piling helped solve both engineering and construction problems.

On-track equipment drives Armco Piling to replace an obsolete structure near Golden Gate, Illinois. There was no need to divert the stream or de-water the site. Cast-in-place Armco Pipe Piles stay water-tight under the impact of driving. Water is no problem.



Formwork is held to a minimum, time and materials saved. Here forms are being placed on pile bents for viaduct over new yard in Chattanooga, Tennessee.



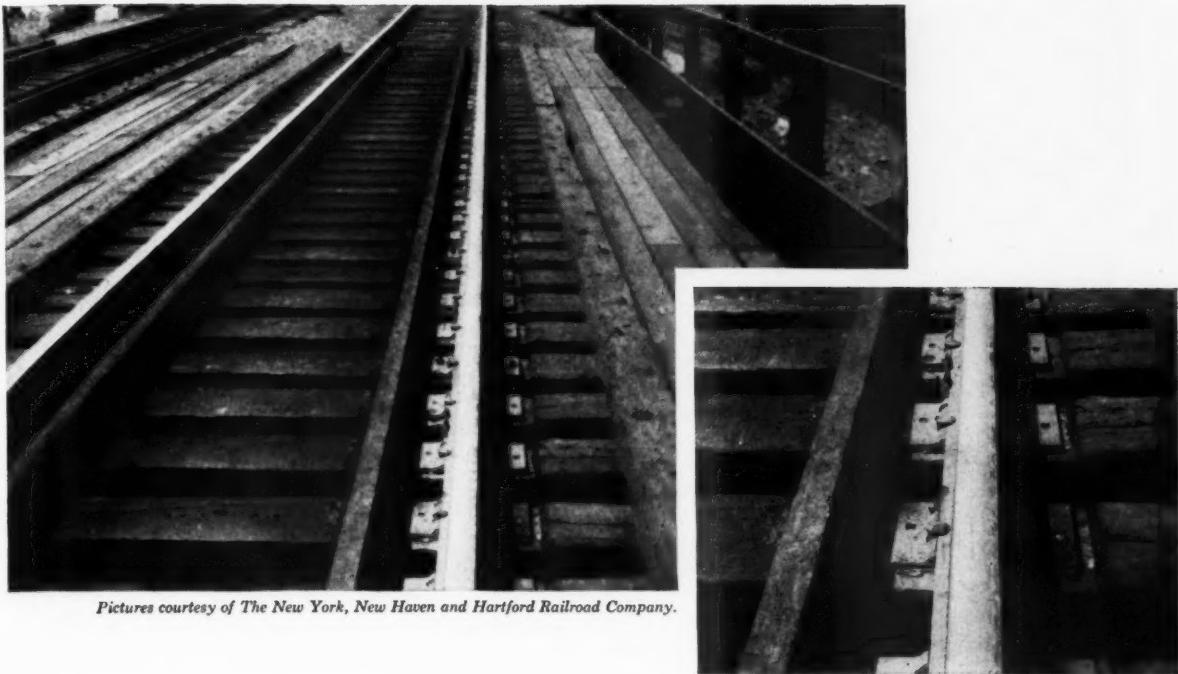
Armco Pipe Piles have gained wide acceptance for trestle construction. This is the retarder bridge for a new yard in Houston, Texas. The foundation presents a minimum resistance to stream flow, has few structural members to pile up debris. And the wide range of diameters and wall thicknesses makes it easy to specify your exact needs.



Write us for complete data. Armco Drainage & Metal Products, Inc., 4086 Curtis Street, Middletown, Ohio. Welded Pipe Sales Division. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.



**ARMCO PIPE PILING**



## SLASH YOUR BRIDGE TIE COSTS WITH BIRD SELF-SEALING TIE PADS

- Add 75%—100% to the service life of new bridge ties.
- Add 50%—75% to the remaining service life of older bridge ties where adzing is not required.
- Add many years of service life to older bridge ties where adzing is necessary.

The older bridge ties pictured above have been mechanically adzed to provide a smooth surface on sound wood. These creosoted fir ties were installed in 1940, replacing a 15-year-old creosoted fir deck. New rail was laid in 1955 at which time the bridge ties were adzed, as shown.

The installation of Bird Self-Sealing Tie Pads has

started a new life cycle for these ties. Bird Self-Sealing Tie Pads eliminate mechanical wear and plate penetration by forming a waterproof, dust-proof seal that protects all vulnerable areas under plates and around spikes.

Many more years of service in track can be confidently expected.

# NEW!

### BIRD TIE CAULK AND BIRD RUBBERIZED TIE COATING

Bird scientists have developed two new products to seal cracks in timbers outside the tie plate areas. When used in conjunction with Bird Self-Sealing Tie Pads, Bird Tie Caulk and Bird Rubberized Tie Coating will ensure maximum service life in track of expensive ties and timbers. For further information, write Bird Tie Pads, Dept. HTS-10, East Walpole, Mass.

*Buy the BEST...*



*Buy BIRD*



**YOU TOO CAN SAVE  
MONEY WITH ...**

*Lewis* **sealtite**  
**RAILROAD FASTENERS**

More than 85 per cent of the nation's No. 1 railroads use Lewis Sealtite products—because the extra features save them money.

Each Sealtite bolt and nut is precision designed to do its particular job better. Every Sealtite product is hot forged from uniform special quality steel.

All Sealtite products are made in the USA to meet or exceed ASTM specifications.

A FEW OF THE MANY  
RAILROADS USING  
SEALTITE PRODUCTS



**OTHER FEATURES THAT SAVE YOU MONEY**

**FLUSH WITH SURFACE**

Sealtite pulls up to a "level with surface" fit without counter sinking.

**PERFECT FIT**

Shank diameter thread to head is exact. No air pockets, no corrosion.

**NO SPLINTERS**

Sealtite scientific design compresses without raising surface splinters.

**PATENTED FINS**

For full bearing strength without tearing or splitting wood.

**MOISTURE TIGHT**

Sealtite tapered, beveled edge forms perfect water tight seal.

**ACCURATE THREADING**

A spinning fit on each bolt offers easy, fast installation.



Sealtite bolts in black and zinc are available with Lock Tight nut No. 2, washer nut or standard square and hex nuts.



*Lewis*

**BOLT & NUT COMPANY**

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**Look to the Allis-Chalmers Line...to**

# MATCH THE NEEDS OF YOUR TRACTOR SHOVEL JOBS

For big capacity, mobility and wide-range versatility — at low cost — choose your tractor shovel from the Allis-Chalmers line. Advanced-design features make Allis-Chalmers tractor shovels the most productive and widely accepted in the earth-moving field. Each offers a shovel that's a built-in part of the tractor, not just an attachment. Four sizes let you match the needs of your jobs efficiently.

You can increase Allis-Chalmers tractor shovel usefulness even more with a variety of quick-change attachments, such as a light materials bucket, rock bucket or rock fork . . . or by adding a rear-mounted ripper.

- Superior balance and low center of gravity
- Sure-footed stability with extra long track
- Greater strength with heavy, welded-steel shovel side frames and low stabilizer
- Simplified hydraulics with 3-way, full-flow filtering
- Powerful, long-life Allis-Chalmers diesel engine
- All-steel main frame and one-piece final drive and steering clutch housing
- Heavy-duty roller bearing truck wheels
- 1,000-hour lube intervals on truck wheels, idlers and support rollers



**HD-6G**  
10-ft dump height  
57 net engine hp  
19,600 lb

**2 $\frac{1}{4}$  YD**  
**HD-11C**  
11-ft, 7-in. dump height  
105 net engine hp  
32,000 lb

**3 YD**  
**HD-16C**  
torque converter drive  
12-ft, 3-in. dump height  
150 net engine hp  
47,800 lb

**4 YD**  
**HD-21C**  
torque converter drive  
13-ft, 4-in. dump height  
204 net engine hp  
66,500 lb

Ask your Allis-Chalmers Construction Machinery dealer for the complete story and for a look at one of these great tractor shovels at work. And remember, your dealer is headquarters for factory-trained servicemen, factory-approved facilities and complete stocks of True Original Parts.

TRANSPORTATION DEPT., TRACTOR GROUP, MILWAUKEE 1, WISCONSIN

# ALLIS-CHALMERS



# Quality Trackwork

UNITED STATES STEEL

# R on the job by U. S. Steel

Over 200 USS Taylor Adjustable Rail Braces were installed on two of the sharpest, steepest curves of the Western Maryland Railway to prevent the inside rail from turning out or breaking under pressure of traffic, which it had been doing. Both curves, one of which is shown here, are in excess of 25 degrees, and both are on almost a three per cent grade, located approximately 70 miles west of Elkins, West Virginia.

Mr. S. W. George, Division Engineer of Elkins Division, shown examining one of the Taylor Rail



Braces, says that this installation was made in an effort to eliminate the problem and to reduce maintenance on these two curves to an absolute minimum. So far, service has been very satisfactory.

The USS Taylor Adjustable Rail Brace is specifically designed to take the repeated thrust of heavy, fast traffic without loosening—maintaining track gage and alignment at all times. Quickly installed, it rarely needs adjustment, and gives long, rugged service at low cost.

All USS Quality Trackwork products possess an inherent strength that gives them longer life and results in greatly reduced maintenance. The extra care and effort that go into the manufacture of rail braces, switches, frogs and special track layouts make USS Quality Trackwork the finest you can buy. Specify USS Quality Trackwork for all your requirements.

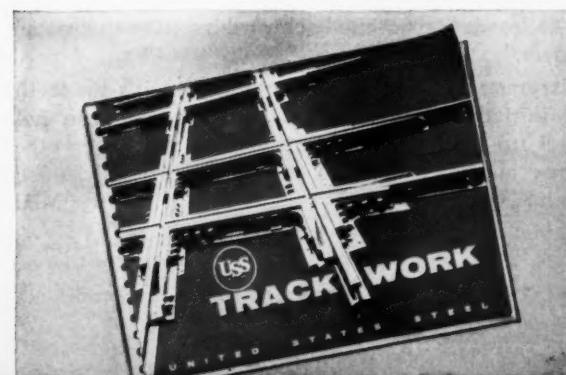
For complete details on USS Trackwork, return the coupon. Also, you are invited to contact our engineers at any time for assistance in design.



## TRACKWORK

UNITED STATES STEEL CORPORATION, PITTSBURGH  
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO  
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.  
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

SEND FOR THIS FREE CATALOG NOW



United States Steel Corporation  
525 William Penn Place, Room 5516  
Pittsburgh 30, Pennsylvania

Please send me a copy of "USS TRACKWORK"

NAME .....

COMPANY .....

ADDRESS .....

CITY ..... STATE .....

# TRACK and STRUCTURES

**Subject:**

**Dear  
Readers:**

## A Public Relations Opportunity

Very few non-railroaders know how the term "gandy dancer" originated but many of them have a mental picture of what it means—a man working on the track with a pick or shovel. In the public mind, the gandy dancer is a symbolic figure. For one thing, and strange as it may seem, he is symbolic of a romantic, carefree way of life. The fact that writers have tended to romanticize him in fiction, legend and poetry has doubtless helped to foster this unrealistic notion. To the extent that the gandy dancer is frequently without family responsibilities, and hence is free to roam about at will, the popular concept has some foundation, but the average itinerant track worker would fail to see anything romantic about the life he leads.

This concept of the gandy dancer is harmless, but in the public eye he has another meaning which can't be taken so lightly. He is a symbol of the "pick-and-shovel" way of doing things. The public knows that such methods have long since been discarded in other industries but it still retains the mental image of a trackman working with hand tools. Is it any wonder that the average non-railroader thinks of the railroads as a backward industry?

The maintenance-of-way personnel of the railroads may not realize it but they are in a position to do something constructive about this situation. The many special machines that are now in use for doing track work and other maintenance operations are commonplace to railroad people, but the fact is they can be used as a medium for dispossessing the public of its notion that the railroads are old-fashioned. Mechanization is a symbol of progress, but the trouble is the public, for the most part, is completely in the dark regarding what has been accomplished in the use of machinery for track work. The problem, of course, is how to bring these developments into public view.

The first step is for maintenance men themselves to discard the notion that the public isn't interested. We suspect they are not only interested, but are even eager to know what is going on. At least we can say that the newspapers, or some of them anyway, regard stories about modern track-maintenance operations as good "copy"—and they are pretty good judges of what their readers want.

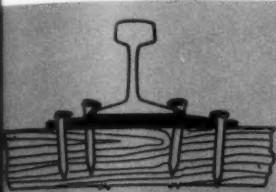
Over a period of time we have noted several examples of this kind of publicity. The latest—brought to our attention by J. P. Hiltz, Jr., vice-president, operation and maintenance, of the D&H—is a full-page story in the Times-Union of Albany, N. Y., describing that road's highly mechanized tie-renewal and track-surfacing gang. It is illustrated by seven large pictures showing practically all the machines used. Mr. Hiltz believes it is "very good public relations to get this sort of story across to the public to show them that the railroads are not the backward industry that people have come to regard them."

There can be no disagreement with this reasoning. But it's up to the railroads to take the initiative. Individual maintenance men can help by bringing the subject up with their public relations people, or other appropriate departments, and offering to cooperate in any way possible. I'm sure they'll appreciate the suggestion. MHD

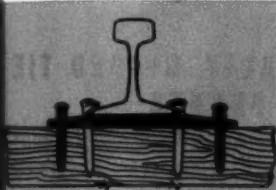
P.S. It might help if you were to show them this letter.

#### HOW IT WORKS

The Racor stud is not an ordinary hold-down device. Rather, it works by preventing lateral movement of the tie plate—which research reveals to be the important cause of tie wear. In preventing lateral movement, it also improves holding of line and gage.



Anchor spikes seldom anchor. The loose fit in the tie plate hole lets the plate work sideways and wear the spikes. This causes wide gage and rapid tie wear.



The Racor stud forms an integral unit with the tie plate. The entire length of the stud shank resists side thrust. Lack of "play" reduces plate motion—holding better line and gage, cutting tie wear in half.



*Your own test track will prove what this curve installation has shown: that easily installed Racor studs really work!*

#### A. R. E. A. TESTS SHOW:

## Racor® studs reduce plate-cutting by half... maintain line and gage best

The recent A.R.E.A. report on the L & N tie wear test confirms years of laboratory findings on the unique Racor accelerated wear machine: namely, that Racor studs reduce plate cutting by about 50% and that they maintain line and gage with least variation. In this test, the Racor studs have had no cyclic maintenance.

In 95 other tests by 38 leading roads, these findings are being further substantiated. As a result, almost 1,000 miles of Racor studded track are now in operation . . . and many more soon will be.

The Racor stud is by far the most economical device for protecting ties and holding line and gage. For less than 6¢ a tie more than anchor spiking, you can substantially extend tie life and greatly reduce track maintenance. This year's investment in Racor studs will pay off handsomely for many, many years to come.

Why not check up *now* on your nearest Racor stud test track? Your Ramapo representative will be glad to help you evaluate results . . . and give any further information.

A-1149

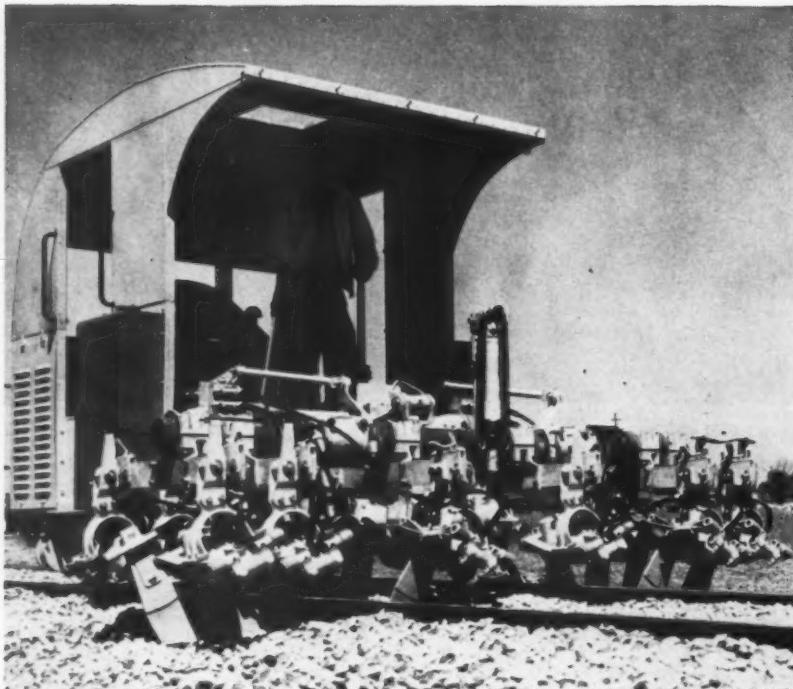
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**from  
GANDY-DANCER  
to . . .**



During our more than 35 years of specialization in the manufacture of tie tamping equipment, the name JACKSON has consistently been synonymous with the best, most economical means of achieving and maintaining track of finest uniform quality under ALL conditions.

Let us help you to the best possible solution to your track tamping problems.

**JACKSON VIBRATORS, INC.  
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**JACKSON MANUALLY GUIDED TIE  
TAMPERS & POWER PLANTS**

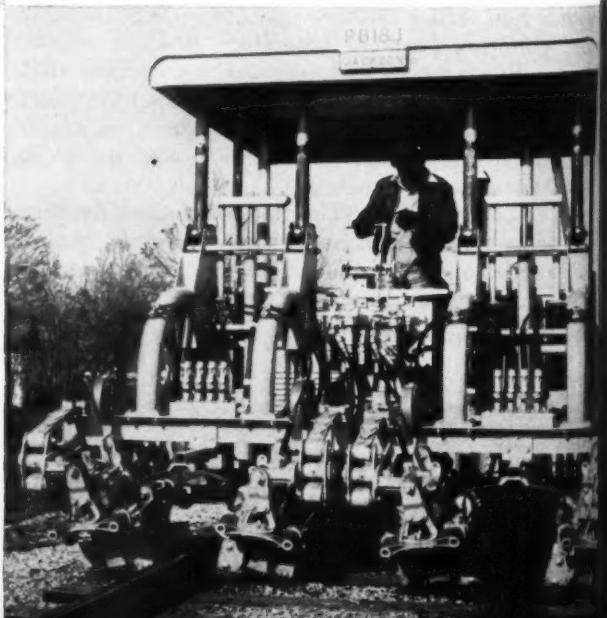
Exceedingly efficient and widely used by small gangs in low lifts and smoothing work, cross-overs and spots where the on-track machines can not reach.

**JACKSON MULTIPLE TIE TAMPER**

Unsurpassed for putting up track of finest uniform quality in all lifts from the highest to those no lower than the average size of ballast used.

**JACKSON TRACK MAINTAINER**

For both putting up and maintaining track of fine quality under the widest range of track lift and ballast conditions this machine has no equal. Invariably the choice of those who investigate thoroughly.



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**2**

From weld making to rail laying, modern engineers have developed continuous rail laying into a swift, efficient operation.

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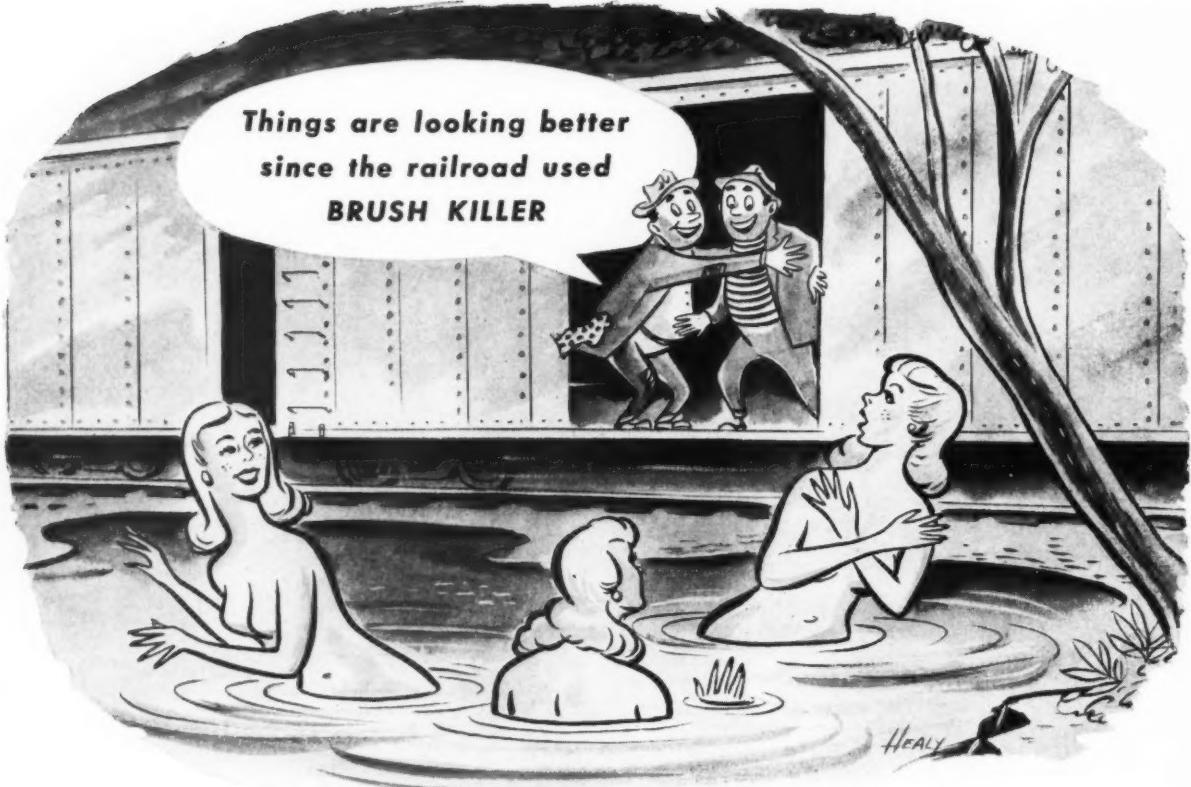
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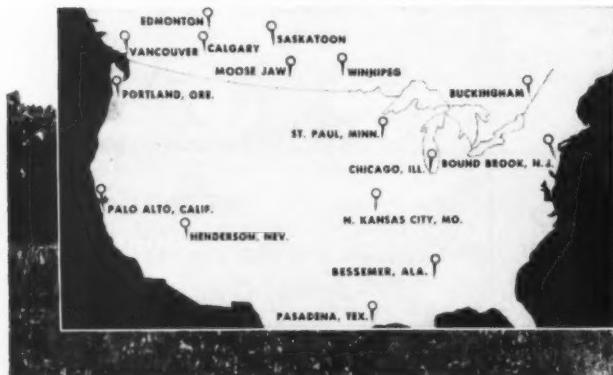


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Here is RACINE'S new Portable RAIL DRILL — completely new simplified design. A precision machine built for rugged in-track service. Once this machine is set up for specific rail size, it will drill hole after hole without further adjustment. Through an exclusive RACINE compensating pressure arrangement, feed of drill varies automatically, depending on sharpness of bit and hardness of rail.

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Simple quick-acting cam actuated clamp holds machine in position and allows rapid removal of machine from track.

### \* EASY TO HANDLE

Carrier guard protects mechanism and provides a convenient carrying handle for lifting machine. Weighs only 165 pounds.

### \* EASY TO OPERATE \*

Clamping device automatically aligns machine. Drill is always properly positioned and securely held in place. Machine is leveled by two quick-acting ground contacts and spirit level.

### \* POWERFUL, FAST

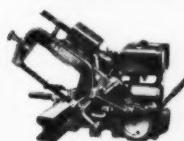
Powered by easy-starting 2 3/4 H.P. four-cycle gasoline engine. Drives

drill chuck at a 30 to 1 reduction providing more than adequate power.

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Holes can be drilled cleanly and accurately through any rail web in less than two minutes. Quick acting drill holder provides easy drill changing. Drill holder is designed to utilize full length of drill shank.

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Portable rail cropping machine—gas engine driven. Saves time—reduces rail failures.



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Gas engine driven. Produces 1160 high velocity blows per minute. Weighs only 60 lbs.



**HYDRA QUAD  
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Four tampers operated by one man. Hydraulically powered by 15 H.P. gas engine. Easy removal from track.



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**O**ne of the most significant advances in American railroading in the past 100 years. . . .

**N**ow producing continuous welded rail at an increasingly higher rate of production at decreasing costs.

The *Matisa* Equipment Corp.

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Tie Renewal Machines • Selective Depth Tamper • Ballast Cleaners • Automatic Jack Carriers • Track Inspection Machines.

## News Notes

... a resumé of current events throughout the railroad world

RAILWAY

# TRACK and STRUCTURES

OCTOBER, 1956

Railroad new construction activity in the month of August has been estimated at approximately \$39 million in a joint survey by the Departments of Commerce and Labor. This is the same amount as was estimated for the month of July, but an increase of 11 per cent as compared with August 1955. New construction in the first eight months of 1956 was estimated at \$279 million—an increase of 19 per cent over 1955's \$234 million estimate.

Amid the talk about the discontinuance of passenger service, GN President John M. Budd told the annual convention of the AAR Ticket Agents that recent pessimistic statements about the future of the passenger business have brought about a loss of public confidence in the industry, injury to employee morale and general confusion. Stated Mr. Budd, "American railways are going to be in the business of carrying passengers in coaches and sleeping cars in addition to mail and express for a long time."

The National Association of Railroad & Utilities Commissioners has advised the ICC that the railroads' passenger deficit problem must be solved in a way which provides for the continuance of passenger service. Even if subsidy were to be involved in a solution, the commissioners were reported willing to accept it.

The Missouri Pacific has announced that it will begin construction on a \$11.5-million double-hump yard in the northeast industrial district of Kansas City as soon "as a few remaining details can be cleared away." The new yard, to be known as Neff yard, will take three years for construction and will incorporate the latest in electronic equipment. It is estimated that the yard will cut car handling time in Kansas City about one-half.

More than 78 per cent of the total tractive force of the railroads was being furnished by diesels at the first of the year, according to the ICC's Bureau of Transport Economics and Statistics. Total tractive force has declined some 13 per cent since 1946 with 26.6 per cent fewer locomotives in service now.

The Erie, the Delaware, Lackawanna & Western and the Delaware & Hudson have announced a move to study the advisability of a merger of the three roads. Members of the boards of directors of the roads are going to look into the proposal which, if consummated, would form a railroad operating a total of 4,000 miles. Aside from the merger possibility, the Erie and the Lackawanna—for economy reasons—will begin to operate their passenger trains from the same station on October 13. The Erie's trains, with the exception of rush-hour commuter trains, will be operated from the Lackawanna's station at Hoboken, N. J., instead of from the Erie terminal at Jersey City. In addition, the two roads are presently making studies to determine the feasibility of joint freight yard operation at Buffalo, N. Y., and the joint use of trackage between Corning, N. Y., and Binghamton.

**Gardner-Denver... Serving the World's Basic Industries**



Gardner-Denver B67 Paving Breakers make fast work of concrete, asphalt or masonry demolition.

**All along the way...  
Gardner-Denver helps get things done**

Railroad men rely on Gardner-Denver equipment no matter what the job or how tough the going. Gardner-Denver tools are easy to use because they are designed for proper balance. Famous for quality, they stay on the job without breaking down. Yes, Gardner-Denver design and dependability really pay off when it comes to maintenance equipment.

Model HK single-drum air hoist. Model 28 clay spader. Six attachments available. A speedy digger.

Model T23 tamper. Packs evenly. Gardner-Denver Model VP4 pneumatic pump. Chromium-plated rod resists wear. Won't sink in mud.



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Designed with sufficient take-up to be used again and again on both new and used rail.

Can be installed or removed with maul or spike maul, and can't be overdriven.

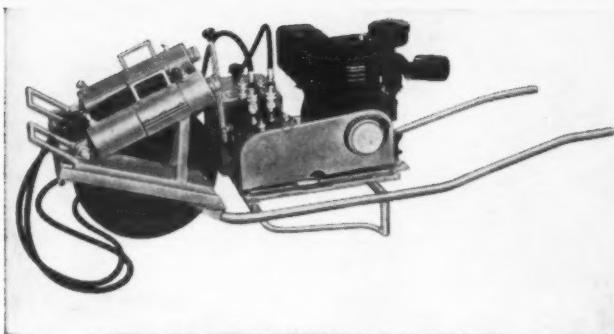
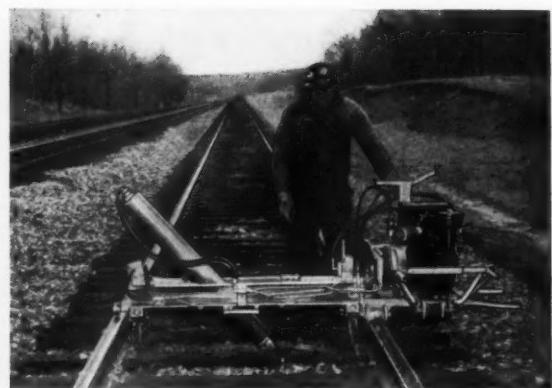
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**More track lined per hour with Minimum effort and expense**

The RTW Hydraulic Track Liner—Model P-O—was devised and designed by railroad engineers thoroughly familiar with maintenance of way problems.

A light rigid self contained attachment with double flanged rollers used with the P-O Track Liner adjusts to any height or weight of rail. It supports a portable air-cooled 8 horsepower gasoline driven engine. This power plant can be used with two hydraulic rams for lining thru switches, road crossings, etc., as well as supplying power for the attachment for out-of-face lining. Its light weight and portability reduces operator fatigue.

**Upper left**—Model P-O gasoline engine powered Hydraulic Track Liner operating two hydraulic rams.

**Upper right**—Model P-O gasoline engine powered Hydraulic Track Liner operating attachment with double flanged track rollers, adjustable for any height and weight of rail.

**Lower left**—Model P-O gasoline engine powered Hydraulic Track Liner and two hydraulic rams mounted on a wheelbarrow type frame that can easily be operated or transported by one man.

**Lower right**—Model H-O Hydraulic pump, light weight, hand operated, that will supply power for one (as shown) or two rams. Ideal for small gangs.

This equipment is also available mounted on a wheelbarrow type frame that can be transported by one man for use in heavy traffic areas.

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The interchangeable units of these highly portable power operated Hydraulic Track Liner combinations afford a smaller force, the equipment necessary to do the work that normally would require heavier oversized machines and a large crew.

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Rail Grinders • Switch Grinders • Cross Grinders • Surface Grinders • Rail Drills • Ballast Extruders • Bit Sharpeners • Tie Nippers • Grinding Wheels • Cut-off Wheels • Track Liners

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# HERE'S THE MACHINE THAT CUTS RIGHT-OF-WAY MAINTENANCE COSTS



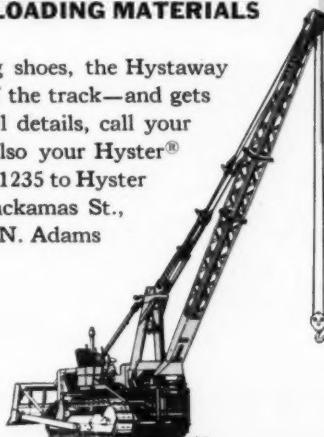
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"ONE-MACHINE" Maintenance Section

Railroads all over the country are using the Hystaway to set new low time and cost records on all types of maintenance operations. This combination bulldozer and excavator-crane, able to travel under its own power, **on or off the track**, packs a lot of production into jobs like these:

- BRIDGE CONSTRUCTION AND REPAIR
- RIGHT-OF-WAY DRAINAGE
- LAYING TRACK
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Equipped with track-walking shoes, the Hystaway travels equally well on or off the track—and gets on or off in a hurry. For full details, call your Caterpillar Dealer. (He is also your Hyster® Dealer). Or write for Catalog 1235 to Hyster Company, 2902-56 N.E. Clackamas St., Portland 8, Oregon; 1802-56 N. Adams St., Peoria 1, Illinois.

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• One-half yard Hystaway can be equipped with all standard front end attachments: Crane, Dragline, Clamshell, Backhoe, Shovel and Pile driver. Designed specifically for Caterpillar® Track-Type Tractors.

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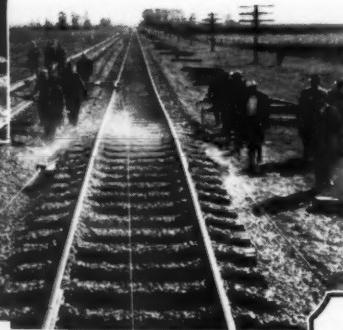


**Burlington  
Route**

**SURFACES  
DOUBLE TRACK**  
*the easy way!*



With the Sled under the track,  
the operation begins. Ballast  
used here is steel mill slag.



First pass of Sled  
has given track a  
4" raise. Second  
pass, after ballast  
distribution, now  
gives a further 4"  
lift.



Mannix Sled is followed by Mannix Dou-  
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track behind sled operation.

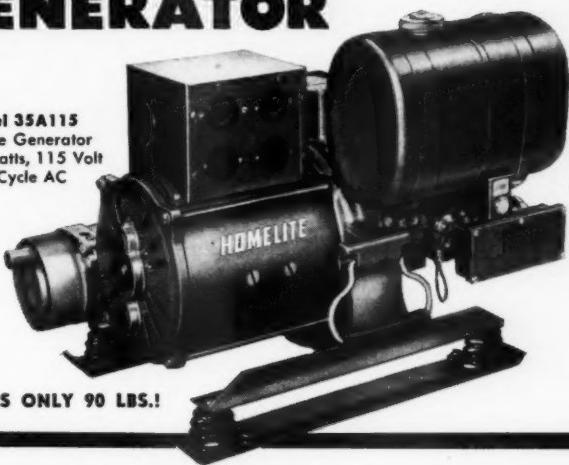


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**Simple... Foolproof... Low Cost**  
**1500 WATT HOMELITE**  
**GENERATOR**

**Model 35A115**  
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 60 Cycle AC



**WEIGHS ONLY 90 LBS.!**

**As easy to move as  
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**1. New Money-Saving features**

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**2. Constant Voltage** . . . less than 4% change from no load to full 1500 watt capacity . . . assures long service life for your electric tools . . . guarantees top performance at all times.

**3. Overload Capacity** . . . 1500 watts continuous duty with generous overload capacity prevents tool stalling under heavy loads . . . insures uninterrupted service even when starting loads exceed operating loads.

**4. Compact and Lightweight** . . . one man can easily carry this 90

lb. generator wherever you need electricity to power time-saving electric tools. No need for long, hazardous power-consuming cables.

**Whatever** tools you want to operate—electric saws, drills, floodlights, grinders, belt sanders, hammers—the new Homelite 35A115 generator can save you money. For a free demonstration or additional information, call your nearest Homelite representative, or write:

**SAVE EVEN MORE!**

New Homelite idle control unit, available as optional accessory, runs engine at idle speed when no current is drawn . . . automatically brings engine to full speed when

load is applied.

Ask your Homelite representative to show you how this easily-installed accessory reduces engine wear . . . increases service life . . . cuts fuel consumption.

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1925



1935



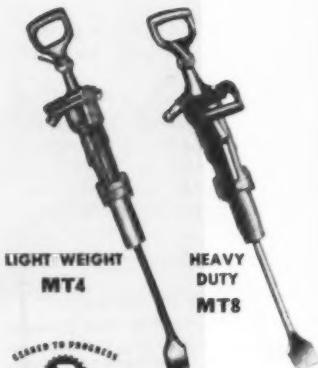
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## MODERN I-R TIE TAMPERS



COMPRESSORS • CONDENSERS • AIR &amp; ELECTRIC TOOLS • TURBO-BLOWERS • PUMPS • ROCK DRILLS • GAS &amp; DIESEL ENGINES

# How 43 YEARS OF PROGRESS

by Ingersoll-Rand

## has made TIE TAMPING TODAY faster, easier and more economical than ever before

Remember when tie tamping used to be a slow, laborious, back-breaking job — done entirely by sheer muscle power? Thanks to Ingersoll-Rand, those days are gone forever.

The first railroad compressor (now reposing in the Smithsonian Institute) was introduced by Ingersoll-Rand in 1913 — and with it, the first air-operated tie tamper. This I-R air-power team revolutionized tie tamping almost overnight. Air tamping not only did a far better and more uniform job — it actually cut tie tamping time in half!

Since 1939, tremendous progress has been made in railroad compressor equipment. Today, mod-

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And for a four-tamper crew, the Ingersoll-Rand Spot-Air compressor gives you a completely self-contained, 36-cfm, 80 psi air power plant that weighs only 265 lb. complete. You can set it just about anywhere, and with wheelbarrow mounting, moving it around is an easy, one-man job. For the whole cost-saving Spot-Air story, send today for your copy of Bulletin 2264B.

1956 SMALL, LIGHT-WEIGHT SPOT-AIR COMPRESSOR  
operates four Tie Tamers



Ingersoll-Rand

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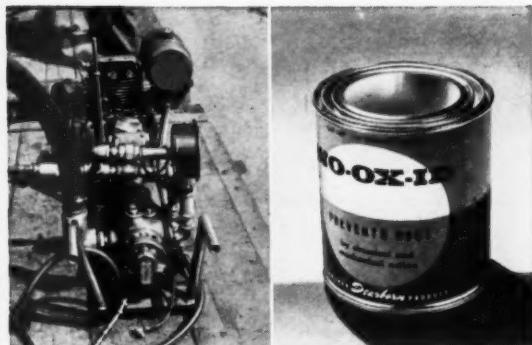




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**Dearborn® NO-OX-ID**

**NO-OX-ID  
SPRAY METHOD  
SAVES MONEY ON  
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FOR MANY  
MAJOR RAILROADS...**



On-the-job spray equipment delivers NO-OX-ID direct from drum to sprayer. There is a NO-OX-ID consistency for every bridge spraying job.

Costly, time-consuming bridge painting programs are rapidly being replaced by the NO-OX-ID Spray Method. Procedure is simple. (1) Remove dirt and loose rust. (2) Spray steel surface with one coat of NO-OX-ID. Result: effective, economical, long-term protection.

**REASONS FOR THE SWING TO NO-OX-ID**

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- One coat gives long-term protection

Dearborn has served railroads since 1887 with NO-OX-ID rust preventives, water treatment, cleaners and detergents.

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Please send me full information on the NO-OX-ID Bridge Spraying Method.

Name..... Title.....

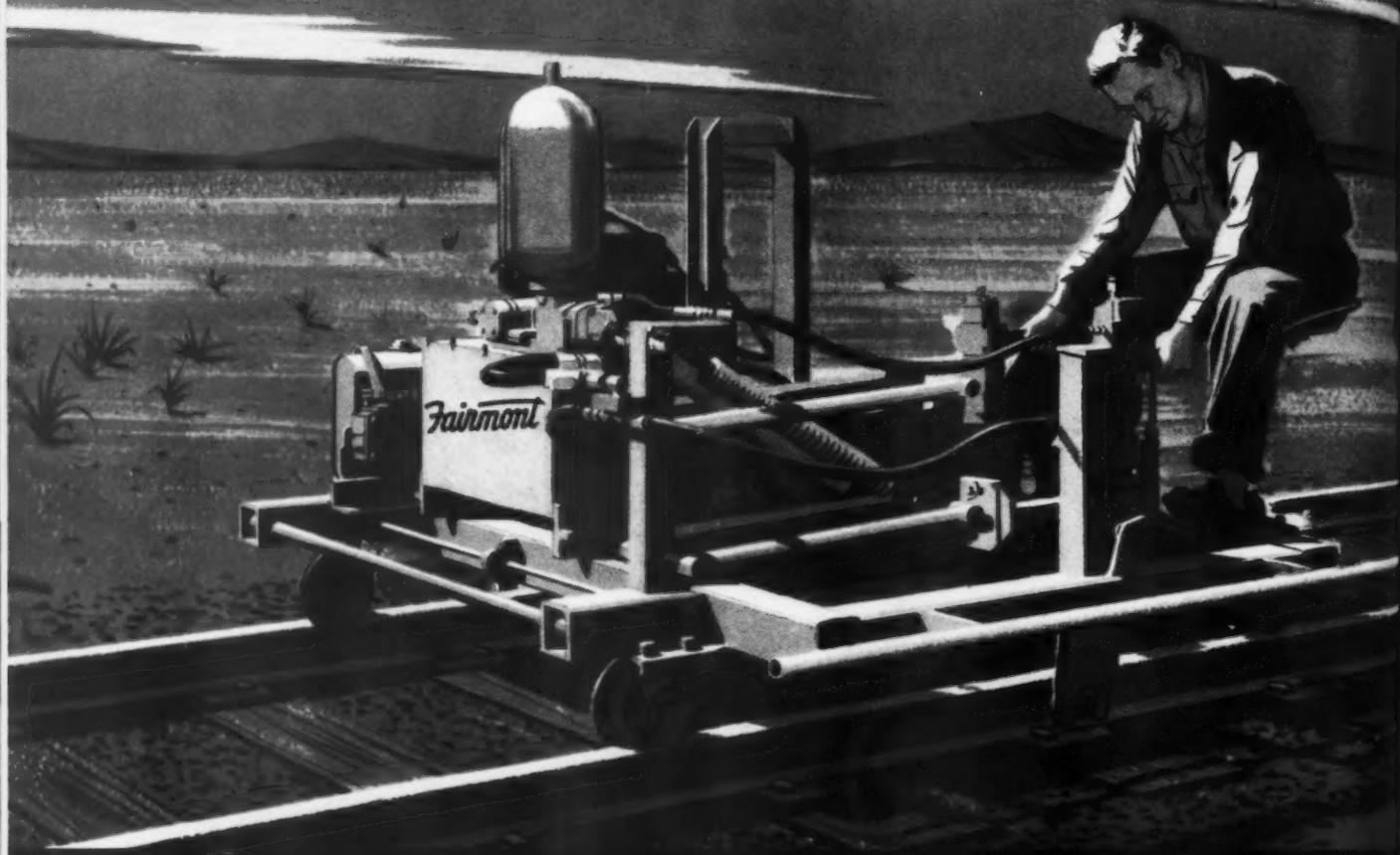
Railroad.....

Address.....

City..... Zone..... State.....

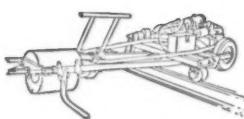


**W85 SERIES B HYDRAULIC SPIKE PULLER**, especially for rail gang use, is self-propelled forward and reverse. Pulls from both sides of rail at the same time. One man operation. Removes 40 to 50 spikes per minute.



*When you think of*  
**RAIL RENEWAL**

*...think first of* **Fairmont**



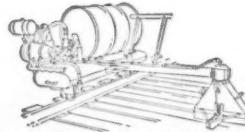
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cleans tie area under and adjacent to the tie plate. Hydraulically propelled, it is ideal for gang use ahead of adzers and for cleaning before applying plastic base to tie plates.



**W89 SERIES A CRIB REDUCER**  
prevents crib from fouling the teeth of adzer. Digging drive includes fluid coupling, multiple V belts and speed reducer. Adjustable counterbalance and 2-way drive. 1-man operation.



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**CARRIAGE** makes spike setting unusually easy and economical. Features include a convenient spike hopper; perfectly placed working seat; double-flanged rail wheels, two-rail, two-way operation.



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applies protective coating to newly adzed surfaces quickly and thoroughly. Requires only one-man operation. Automatic spray. Average consumption only 25 gallons of preservative per mile of single rail.

When it's time for rail renewal, make it a point to think first of Fairmont. You'll find that Fairmont manufactures a time-and-money saving tool for every phase of the job. Individually, these products represent the most advanced design and construction available in their specific fields—and together, they provide the perfect answer to any and all rail renewal problems. We'll be delighted to send you detailed information on any Fairmont products in which you might be interested. Write or call Fairmont *first!*

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RAILWAY TRACK and STRUCTURES

RAILWAY

# TRACK and STRUCTURES

OCTOBER, 1956

Vol. 52, No. 10

"Dear Readers" ..... 18

Does the public still have the idea that the railroads retain the "pick-and-shovel" way of doing things? What can be done about it?

News Notes ..... 25

A resumé of current events throughout the railroad world, prepared at press time by the RT&S staff.

Bridge Deck Built for Long Life ..... 37

Many modern features for getting maximum life are incorporated in the new decking recently installed on the Merchants' Bridge at St. Louis.

Now—A "Double-Track" Plow ..... 40

New version of undertrack plow has blades angling in only one direction permitting its use in double-track territory.

How to Reclaim Old Ballast ..... 42

How good stone ballast, left in place after 22 miles of main track were taken up, is being made available for reuse on the Pennsylvania.

Fast R/W Grading on Southern ..... 44

How motor grader and tractor-drawn scrapers shape cut and ditch slopes, maintain roadway, and cut berm ditches at tops of cuts.

Our Camera "Covers" the Conventions ..... 45

Accomplishments of the conventions—presented with candid photographs taken both at the convention and at the exhibit.

News Briefs in Pictures ..... 50

Removal of a coal wharf on the Richmond, Fredericksburg & Potomac to make room for a new car repair shop—Extra-duty coal-handling tractor boasts custom-built boom.

What's the Answer? ..... 51

Widening subgrade shoulders—Ventilation requirements for painting—Lining turnout closure rails—Pouring bearing areas—When widening embankments.

Products of the Manufacturers ..... 56

News of the Month ..... 66

Helps from the Manufacturers ..... 76

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*right  
for  
rail  
joints*



AREA Track Committee Photo

## STANDARD Petrolatum HMP

(High Melting Point)

If you use STANDARD Petrolatum HMP for rail joint lubrication and corrosion protection you get some important benefits. Here are three:

- 1 **Easier track maintenance.**
- 2 **Less chance of damage from joint freezing.**
- 3 **Longer rail joint life.**

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**STANDARD Petrolatum HMP** seals joints thoroughly and one application lasts years. The lubricant won't run off in hot weather or freeze up when it's cold. It is not affected by water washing or dissolved by brine dripping from refrigeration cars. It is easy to work with and apply.

**Get more information** about STANDARD Petrolatum HMP and other Standard Oil maintenance of way lubrication products. Write or call Standard Oil Company, 910 S. Michigan Avenue, Chicago 80, Illinois.

### Quick Facts About **STANDARD Petrolatum HMP**

- Seals thoroughly
- Unaffected by high or low temperatures
- Won't water wash
- Not affected by brine dripping
- Penetrates and protects rail, joint bar, nut and bolt threads



**STANDARD OIL COMPANY**  
(Indiana)

**Big Renewal Job Produces . . .**



RENEWAL WORK at interlocking on west approach was the most complicated part of the project. Gang here is installing the special trackwork on new deck. This work was done in 1954; other phases in 1955 and 1956.

## Bridge Deck Built for Long Life

**As a result of project started in 1954 and completed this year the Merchants' bridge across the Mississippi at St. Louis has an entirely new deck structure which incorporates many modern features for getting maximum service life.**

• A deck-renewal project carried out recently on the Merchants' bridge across the Mississippi river at St. Louis affords an example of what is being done these days to extend the service life of such struc-

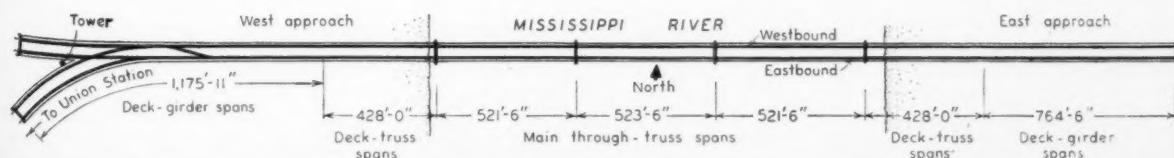
tures and to reduce their maintenance costs. It also contains an object lesson on how to conduct such work on a busy double-track structure.

The Merchants' bridge, owned and operated by the Terminal Railroad Association of St. Louis, consists of three main, through-truss spans across the river and approaches of considerable length at each end, consisting largely of deck-girder spans on steel towers. At the west (St. Louis) and the elevated approach structure has two legs, one curving southwest and leading

to the Union Station, and the other curving northwest. The latter leg, serves numerous industries, connects with several railroads and leads to the Delmar station of the Wabash.

There are two switches at the junction of the two legs on the west approach and a crossover between that point and the west main span, which are controlled by mechanical interlocking from a tower located on the bridge between the two legs.

The project to renew the deck of the main spans and of the ap-



DIAGRAMMATIC plan of the bridge gives an idea of the scope of the deck-renewal project.

## Work on west approach was first step in three-year project



STEEL REPAIRS were made as part of project. Here metallized cover plates are being applied on the existing girders.



NEW TIES were sized to depth of 7 3/4 in and were tapered to give superelevation. Prebored holes are for hook bolts.

### Bridge Deck Renewal . . .

proaches was undertaken in 1954 and is being brought to practical completion this year. Here are the main features:

- Tie pads on all ties
- New ties throughout
- Larger tie plates
- Tie pads on all ties
- Hold-down spikes all ties
- Compression clips every second or third tie
- Repairing and painting of steel work
- Metallized cover plates at critical points

Engineering officers of the TRRA, in laying plans for the deck-renewal job, wanted to obtain a structure that would last for a good many years with a minimum of attention in the meantime. It was logical, therefore, that they should elect to replace the existing 100-lb RB rail with new 115-lb RE steel. It was equally logical that they should decide to renew the old ties out of face. For the new ties they selected 8-in by 8-in by 10-ft creosoted timbers, sized to a depth of 7 3/4 in. On curves the ties are tapered as necessary to provide the required superelevation.

#### Aim at Longer Tie Life

Several steps were taken to assure that the ties would not have to be taken out of track prematurely because of mechanical damage. One of these was to increase the size of the tie plates from 7 3/4 in by 10 1/2 in to 8 in by 13 in. Another was to install tie pads throughout. To a large extent Bird and Burkart

pads are used, although there are some Racor, Fabco and Johns-Manville pads. As the third step to reduce mechanical wear of ties, as well as to secure other benefits, two hold-down fastenings were used at each tie plate. These are either Lock Spikes or drive spikes.

Every second tie on curves and every third tie on straight track is fastened to the girders or stringers, as the case may be, by two malleable hook bolt lugs with galvanized bolts, extending through prebored holes. For anchorage, Compression clips are used, placed at every hook-bolt tie. Outside guard rails are wood fastened with 3/8-in galvanized lag screws or drive spikes, inserted through holes bored in the field.

#### Metallized Cover Plates

Another step taken with an eye to future economies was the installation of metallized cover plates on the girders in the area of the interlocking on the west approach. The cover plates in this area are considered most vulnerable to deterioration from corrosion, most expensive to maintain, and most difficult to inspect, clean and paint. These difficulties arise primarily from the fact that the ties are interlaced in this area, almost completely covering the top flanges at some locations.

These cover plates, which are  $\frac{1}{8}$  in thick, were given a coating of pure zinc .012 in thick in the metallizing process, covering the top surface and the edges. This work was done in the shop. When installed the plates were fillet welded on the underside to the top flange angles.

Where it was necessary to install rivets at connecting plates for the lateral system, countersunk holes were provided in the plates before metallizing to leave a smooth surface for the ties.

The exposed heads of the rivets were painted with a galvanized base paint.

As might be expected, the procedure followed in carrying out the deck-renewal work was dictated by the heavy traffic carried by this key structure. Normally there are 20 passenger-train movements across the bridge in each direction in every 24-hour period, 12 movements of foreign freight trains, and about 50 TRRA train and engine movements. This comes to a total of 164 movements across the bridge in both directions daily.

#### Three Main Steps

The deck-renewal work was done in three major steps or stages each involving a particular portion of the bridge. In all three steps the track on which the work was being done was taken out of service. In the first two stages, however, the track could be kept out of service only for a few days, thereby creating many problems for the work forces and causing a loss of time when closing up the track at the end of the period. In the third stage it was possible to obtain the complete use of the track until the work in the particular area was finished. This procedure had important advantages as will be seen later.

The first step or stage was carried out in 1954, the second in 1955 and the third in 1956. Here is an account of what was done during each of the stages and of the effect on the



**NEW DECK** ready for installation of trackwork and wood guard rails. Note that hook bolts are galvanized.

**FIRST STEP** in installation of new track-work and rails was placing of tie pads which were used throughout the new deck.



work of the length of the track-occupancy period:

**Stage 1 (1954)**—This stage involved both tracks on the west approach from the west abutments of both legs to a point just east of the crossover. When this work was done the forces could obtain use of a track for a period of one to two weeks at a time. During this period it was necessary to strip the track down to the steel work, carry out necessary steel repairs and painting, and restore the track with new material.

#### Most Complicated Phase

This phase was the most complicated due to the fact that it involved replacement of the special trackwork at the interlocking. The special trackwork, incidentally, was furnished by Ramapo Ajax and is constructed in accordance with the so-called Southwestern Standard. Frogs are of solid manganese and of the self-guarded type.

During this first phase the amount of time that the tracks were out of service totaled up to 45 days.

**Stage 2 (1955)**—This phase involved the northerly or westbound track from the crossover across the main spans to the east abutment of the east approach. The procedure was substantially the same as that described for the 1954 program.

Usually, however, it was possible to have the use of the track for only four days at a time, Monday through Thursday. This required close coordination between the various crafts and again considerable time was lost closing up each weekend. After a length of the deck had been renewed, a week was usually required to do preliminary work in preparation for starting work on another portion.

In Stage 2 the track was out of service a total of 40 days, but the work was in progress over a period of about 20 weeks.

**Stage 3 (1956)**—This final phase involved the southerly or eastbound track from the crossover to the east abutment. The manner in which the work was carried out differed in two major respects from the procedures used in the two previous years; (1) A considerable portion of the steel repair work was done in advance of the deck-renewal work; and (2) arrangements were made with the operating department to have full use of the track until the entire deck involved in this step had been renewed.

During this phase the forces worked seven days a week, nine hours a day. Because of the preliminary work that had been done and the fact that the availability of the track full time allowed the forces to schedule their operations in a more orderly fashion, only 19 days were required to finish the entire job.

In all three phases, the top surfaces of flanges (except where

metallized) and lateral bracing were cleaned with chipping hammers, scrapers and air-powered rattlers and given two coats of paint before the new ties were placed. The primer coat consisted of red lead, and black graphite paint was used for the finish coat.

#### Painting Approach Structures

In addition to the work described, the structural steel in both approaches is being cleaned and painted. The main spans, however, having been painted several years ago, are not involved in the current painting program.

All work involved in this project was carried out under the general supervision of V. C. Hanna, chief engineer of the TRRA. Phases of the work involving track matters were under the direct supervision of F. L. Horn, engineer of track, and Linzey Cannon, track supervisor. M. W. Bruns, bridge engineer, and N. C. LeClaire, superintendent of bridges and buildings, had direct supervision over structural aspects of the work.

**Plow operates in same manner as on single track but auxiliary**



## **Now—A "Double-Track" Plow**



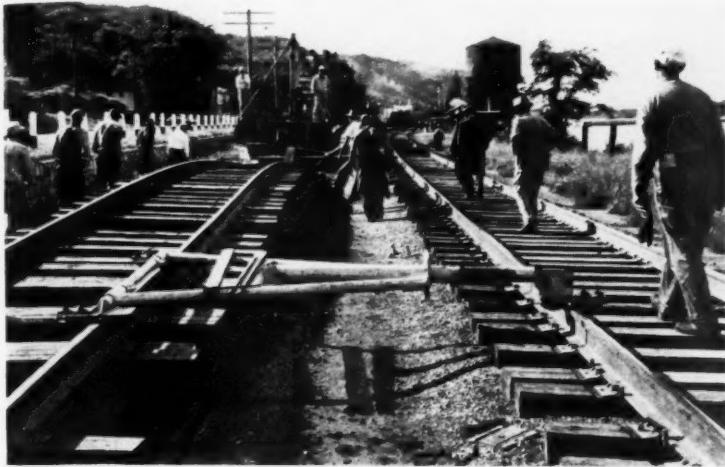
**BLADES** of the double-track plow angle in one direction only, so that . . .

New version of the undertrack plow has blades angling in only one direction to permit its use in double-track territory. Another development is a device that keeps the track being plowed in alignment.



. . . **BALLAST**, from about the mid-point of the intertrack space, is pushed out to the shoulder.

## device keeps track in alignment.



• The Mannix undertrack plow for disposing of old ballast, heretofore limited to use on single-track lines, has now been adapted for use in double-track territory. Its adaptation for this purpose has been facilitated by the development of an auxiliary device which is used for keeping the track being plowed in correct alignment with the adjacent track.

As originally developed the undertrack plow<sup>\*</sup> had V-type blades and hence could be used only in single-track territory. The double-track version operates on the same principle except that the blades angle in one direction only so that the ballast, from about the midpoint of the intertrack space, is carried entirely across the track and then deposited on the outside shoulder.

### Burlington Tries It Out

The Chicago, Burlington & Quincy was one of the first roads to use the "double-track" plow. During the 1956 working season, this road carried out an extensive reballasting program on double-track portions of its line between Chicago and Minneapolis-St. Paul. This program involved the reballasting of about 53 miles of track. The old ballast was plowed out with Mannix equipment and for part of the work the Mannix sled was used for raising the track on new ballast. The average track raise was 6 in.

The work was seen in progress near Alma, Wis. In this territory

chatt ballast placed in 1940 was being replaced with new crushed stone and ties were being renewed as necessary.

At the time the plowing operations were inspected the work was underway on the westbound track; approaching the Alma station from the west. Except for the fact that the double-track plow was being used, the general procedure, with a work train pulling the plow, was the same as where a single-track plow is used.

While the track was in the humped position the ties to be renewed were knocked down and pulled away from the track and into the clear.

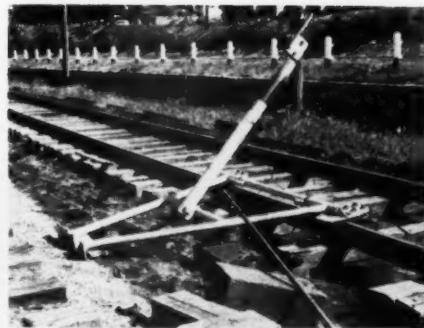
### How Lining Device Works

A distinct innovation, however, was the use of the alineing device. This is an A-frame that is towed behind the work train by a cable of such length as to place the device about at the point where the track is settling back on the roadbed.

The base of the A-frame, made of steel members, rides on the inside rail of the track being plowed, with the apex extending to the near rail of the other track. At each of the three points where the A-frame bears on the rails there are two rollers bearing against the opposite sides of the rail head. The spacing of the rollers is adjustable to adapt the device for use with different weights of rail.

### Adjusts for Track Centers

The key member of the A-frame is a tubular arm whose outer end constitutes the apex of the frame.



LINING device has hinged arm which may be thrown back into clear on the approach of a train. The liner is . . .

. . . DRAWN behind plow by cable attached to work train. Telescoping arm is adjustable for different track centers.

This member has two points of particular interest. One is that it has a telescoping feature by means of which it may be adjusted for track centers ranging between 12 and 15 ft. The arm is fixed at any desired spacing by adjusting the fixed and movable portions and keying them in that position by a bolt.

The other interesting feature is the fact that the telescoping arm has a hinged connection with the A-frame so that it may be thrown back into the clear to allow passage of a train.

Following closely behind the plow a gang inserted new ties and respaced the ties as necessary. In this work a Nordberg Power Jack was used to lift the track slightly to facilitate insertion of the new ties by hand and Simplex tie spacers were used in the spacing operation.

### When Sled Is Used

After the ties have been renewed and spaced, the anchors are applied. Sometimes additional anchors are added to one rail to prevent the ties from skewing or bunching where the sled is used to place new ballast.

As soon as the tie spacing and anchoring is completed, new ballast is unloaded and properly spread by the work train. The sled is then put under the track to provide a uniform lift of from 4 to 5 in.

Additional ballast is unloaded to fill the cribs and provide enough ballast for the final lift of 2 in., which is brought up with a Power Jack and tamped with Jackson Multiple Tamers.

\* See the August 1955 issue for a description of the Mannix plow and its use on the Northern Pacific. Use of a companion unit—the Mannix undertrack sled for raising track on new or old ballast—was also described.



CONSISTING of two units (Above), the Model 188 Ballast Reclaimer, picks up, screens and loads the recovered ballast. The towing unit has a cutting edge which can be raised and lowered to the desired depth of cut. The dirt and fines are screened out and dropped on the roadbed, while the cleaned ballast drops onto the conveyor of the towed unit for loading in cars.

RECOVERING BALLAST (Left) at less than cost of new ballast is what the Pennsylvania is doing on a stretch of 22 miles of main track which was taken up between Lancaster, Pa., and Parkesburg. The recovered "secondhand" ballast is being used by several track-maintenance gangs working on the road, and is reported to be as good as new material.

## How to Reclaim Old Ballast...

### ... When Tracks Are Taken Up

Good stone ballast, left in place after 22 miles of main track were taken up, is being reclaimed and made available for reuse on the Pennsylvania. Making two passes with an Athey Model 188 Ballast Reclaimer, the stone is picked up, cleaned and loaded into hopper cars at a cost considerably less than that of new ballast.

• Many railroads are reviewing their operating practices and reducing track mileage—both main tracks and sidings—to that required to handle present day operations efficiently.

A program of this type on the Pennsylvania has resulted in the removal of a considerable mileage of main tracks. A study of these locations developed that the ballast, after removal of the rails and ties could be reclaimed for considerably less than the cost of new ballast and at the same time that an improvement could be made in the drainage for the remaining tracks.

Good stone ballast, left in place after a stretch of 22 miles of the main track was taken up between Lancaster and Parkesburg, Pa., is now being reclaimed and made available for reuse. Several track-maintenance gangs, working on important lines of the Pennsylvania, are using this so-called "second hand" ballast, but it is just as good as new material, and much more economical. By using the reclaimed material the railroad is effecting savings of about \$1.00 per ton as compared with the cost of providing new ballast.

The stone being reclaimed is mostly crushed trap rock, ranging from 1 in. to 2½ in. in size. The depth of the reclaimable ballast on this particular stretch of roadbed is about 14 in.

#### Uses Ballast Reclaimer

The Pennsylvania is using an Athey Model 188 Ballast Reclaimer to pick up, clean and load this stone ballast into hopper cars. Work started at the Lancaster end on Monday, April 16, 1956, without any preliminary scarifying or windrowing of the ballast. The reclaimer began digging a swath 8 ft. wide and 6 in. deep, loading the cleaned stone into hopper cars of a work train on No. 2 track, which traveled at a speed to conform with the progress of the Ballast Reclaimer.

In a little more than two hours working time four cars had been loaded, each with about 65 tons of cleaned ballast ready for placement.

At the end of nine working days,

## Here's a Description of the Ballast Reclaimer

This outfit, designated the Model 188 Ballast Reclaimer, was developed by the Athey Products Corporation, Chicago. It consists of two units, one of which is towed by the other.

The towing unit combines the Athey Model 125 HiLoader with a shaker screen. It carries a patented full-floating feeder at the front, equipped with a cutting edge which can be raised or lowered to the desired depth of cut. The feeder carries the material to be reclaimed to a loader belt which transports the foul ballast to a shaker screen where the dirt and fines are screened out to fall in a hopper which channels this material to a side discharge wasting conveyor. The latter may be adjusted to discharge to either side. The cleaned ballast moves to the bottom of the shaker screen where it falls on the belt of the rear-end conveyor of the towed second unit.

The towed unit carries a long elevating belt conveyor which is powered by a separate engine on the unit. The discharge end of this conveyor is equipped with a delivery chute, the latter being adjustable so it can load cars standing on a track either at its right or left. The conveyor boom is raised and lowered hydraulically to load high-sided hopper cars and may be swung 17 deg on either side of center. The belt speed of this



TWO-WHEEL assembly of towed unit is a new feature which permits easier following and better distribution of weight. Long pin allows greater vertical travel.

conveyor is higher than the elevating belt on the towing unit so that it can always carry away the cleaned ballast faster than the material is delivered to it from the shaker screen.

Two improvements have been made in this machine since it began work on the Pennsylvania. One was to replace the single front-end idler swivel wheel of the rear conveyor unit with a two-wheel as-

sembly to permit easier following and better distribution of weight at the front end. The other was the changing of the hitch between the towing and towed units to allow greater vertical travel so that the weight of the towed unit is carried entirely by its front two-wheel assembly without bearing down on the rear of the towing unit to affect the digging operation.

during which a number of problems were met and solved, the work was proceeding smoothly and a hopper car was being loaded in 22 min. At this point 62 cars had been loaded in slightly less than 28 hr working time, and the machine had traveled 6.3 miles on its first pass, reclaiming approximately 4,030 tons of ballast.

### 300 Ton-Per-Hour Rate

By June 20 the machine had completed its first pass over the 22 miles and had loaded 215 cars, or approximately 14,000 tons of reclaimed ballast.

The best performance of this outfit to date has been the loading of 20 cars in 4 hr and 18 min actual working time, which is at the rate of one car loaded in 13 min, or 300 tons per hour.

This work requires a foreman, one engineer work equipment and one machine operator, plus the required work train crew. The foreman rides on the work train and directs its movement to conform with the speed of the Ballast Reclaimer, so that cars are loaded properly. The engineer work equipment operates the lead unit of the Ballast Reclaimer (see accompanying description), guides it on the

former roadbed of No. 3 main track and controls the digging depth. The machine operator controls the rear conveyor unit and swings the boom so that the chute deposits the cleaned ballast directly into the hopper cars.

The Ballast reclaimer has now turned around and is making a second pass over the same roadbed, working back toward Lancaster. Because of the harder digging encountered on the second pass, a tractor with rooter attachment is being used in advance of the machine to scarify the surface to a depth of about 12 in. This procedure loosens the ballast and enables the machine to obtain better production when digging to a depth of approximately 8 in.

### In Electrified Territory

This work between Lancaster and Parkesburg is in electrified territory. To eliminate the hazard which might be caused by the conveyor boom striking the wire of No. 2 main track, the road uses diesel power for the work train, and the wires over No. 2 main track are de-energized during the time the Ballast Reclaimer is working.

One or two of the gang watch-

men, with whistles and flags, also are used to warn the men of approaching trains, the two being employed when working around curves or in those locations where the view of approaching trains is restricted.

### Save \$1.00 per Ton

Including the cost of the work train and crew, and the wages of the foreman, engineer work equipment, machine operator, gang watchmen and of the Class "A" electric traction man required to handle the de-energizing of the trolley wire, and the fuel and supplies required for the machine, the road reports that it is saving about \$1.00 per ton in reclaiming this ballast as compared with the cost of approximately \$1.75 per ton paid for new ballast. E. R. Shultz, engineer maintenance of way and structures, under whose general direction this work is being carried out, anticipates the saving will hold for the entire job.

Altogether, the railroad has taken up more than 200 miles of main track. It is anticipated there is enough ballast to be reclaimed from these retirements to keep the Ballast Reclaimer busy for some two years.



MOTOR GRADER was used to shape cut and ditch slopes, maintain roadway, and cut berm ditch at tops of cuts.

GRADING proceeds in cut near Pacolet, S. C., as a train speeds by. Motor grader is working on cut slope, and a tractor-drawn scraper is visible in right background.

## Fast R/W Grading on Southern

- A team of grading equipment including both rubber-tired and crawler units is proving effective for right-of-way grading operations on the Southern.

A key machine in the six-unit team is a Huber-Warco 5D-190 motor grader. The grader banks slopes, cuts service ditches and maintains roadways. Other units of the team include three DW20 Caterpillar tractors for pulling 20-yd pan scrapers, a Caterpillar D7 for pushing the pans during loading and a Caterpillar D8 for leveling the dump area.

The first project assigned the grading outfit involved the clearing and restoration of slopes on the right of way of the main line between Columbus, S. C., and Spartanburg. Working out of Pacolet, S. C., under the direction of grading supervisor, L. V. Armstrong, the six-man crew began clearing and restoring one side of the right of way. Within a relatively short time the work had been finished on one side for 12 miles and the crew had started back on the opposite side. The turn-around point was a highway overpass. At this point was located one of the largest cuts the grading crew had yet encountered.

Specifications for the cut called for a 12-ft roadway and a ditch 9 ft wide at the bottom. From the opposite

edge of the ditch the side of the cut was to be graded to the top, and a service or berm ditch was to be dug at the top of the cut.

### How the Cut Was Handled

The Huber-Warco grader started the operation by bank sloping and cutting down loose material. Behind the grader, the three Caterpillar tractors with pan scrapers picked up the material and carried it to a dump area. The round trip distance to the dump area varied from  $\frac{1}{2}$  to one mile. Then, in a series of passes the grader cut the slope down deeper while the pans worked the material at the bottom of the slope. This procedure was continued until the right-of-way area was reshaped to conform to the specifications.

Working five days a week, 8 hours a day, the crew moved an average of 4,000 to 5,000 cu yd per day. Although most of the material in the area was red clay, there was some rock which had to be drilled with a wagon drill and "shot" with dynamite.

Another grading team is doing similar work on the Georgia Southern & Florida, which is a division of the Southern.



REGISTRATION DESK opened this year on Monday, September 17, a day before the conventions started, thereby relieving the usual congestion that occurs on the first day. Total registration for the three-day meetings was 1765 members and guests.



J. P. Newell, vice-president, Pennsylvania, spoke on "The Road Ahead."



R. J. Stone, vice-president, operations, Frisco said workers need "job satisfaction."

## Our Camera "Covers" The Conventions

RT&S photographer visits the meetings  
of the Roadmasters' and Bridge & Building  
Associations held at Chicago last month

● Happenings at the annual meetings of the Roadmasters' and Bridge & Building Associations, held last month at the Conrad Hilton hotel, Chicago, couldn't help but make a lasting impression on those who attended. Here are some of the reasons why:

- The total registration of 1765 members and guests was a new high.
- The exhibit of manufacturers' products at the Coliseum was also of record proportions measured by the space occupied.
- The addresses and committee reports presented during the joint and separate sessions were packed with brass-tacks information useful to every supervisor.

The committee reports and other features of the business sessions gave the members the usual opportunity of bringing themselves up to date regarding specific problems

and developments in their respective departments. In addition, through the agency of three addresses by top-ranking officers, they were given the rare opportunity of finding out what management is thinking about them and their activities.

Take, for example, an address by R. J. Stone, vice-president, operations, of the Frisco, on "People, Precision and Progress." Mr. Stone expressed concern that industry generally, and the railroads in particular, have not given enough thought to the social problems brought about by work mechanization. He feels that the railroads have been more successful in developing and applying physical improvements than they have in coping with problems produced by these changes.

Industrial and technological progress have produced a wealth of material things for making life easier and happier, but Mr. Stone implied

## Camera at the Conventions . . .



The Western Pacific was well represented. Here are three WP men: Mark Chilton, track supervisor; J. P. Connolly, roadmaster; R. F. Hobbs, roadmaster.



Claude Johnston, assistant to vice-president, Birmingham Southern; Edward Wise, Jr., engineer maintenance of way, L&N; H. E. Durham, research engineer track, AAR.



W. M. S. Dunn, staff engineer, C&O, and president of the Roadmasters' Association, directed the sessions of that group.



H. M. Williamson, engineer maintenance of way & structures, SP; M. S. Westlund, vice-president, Jackson Vibrators, Inc.



L. H. White, supervisor bridges & buildings; G. M. O'Rourke, assistant engineer maintenance of way—both IC.



J. W. Mangan, superintendent of work equipment; W. H. Haggerty, engineer track; J. J. Thewlis, supervisor track—all NYNH&H. Fred A. Kaup, repres., Fairmont Railway Motors, Inc.



Stanley Smith, president, Stanley H. Smith Co.; W. C. Howe, engineer bridges & buildings, B&LE; C. W. Morrison, supervisor track, B&LE; T. F. Burris, chief engineer, system, C&O.



**J. E. Griffith**  
President-Elect  
Roadmasters' Association

### NEW OFFICERS— Roadmasters' Association

In the election of officers in the Roadmasters' Association, J. E. Griffith, assistant chief engineer, Southern, Knoxville, Tenn., was advanced from first vice-president to president; E. L. Anderson, chief engineer of the Frisco, Springfield, Mo., was moved up from second vice-president to first vice-president; C. E. Neal, division engineer on the Northwestern Pacific, San Rafael, Calif., and a director of the association, was elected second vice-president; and R. G. Simmons, general roadmaster of the Milwaukee Road, Chicago, was elected treasurer, succeeding E. E. Crowley, division engineer, Delaware & Hudson, Albany, N. Y.

Two new directors were elected: S. E. Tracy, superintendent work equipment, Chicago, Burlington & Quincy, Chicago; and V. C. Hanna, chief engineer, Terminal Railroad Association of St. Louis.

that, even with these material gains, people are not free from anxieties and frustrations.

He asked these questions:

1. As a consequence of these phenomenal gains do we find complete happiness, exultation and enthusiasm in our employment relationships?

2. Do we find as a result of these achievements a greater ability to work together peacefully, a greater dedication to higher standards of service and craftsmanship? Do we find a greater emotional security and peace of mind?

"Assuming that your answer might be other than a convincing 'yes,' what do we do about it? I am certain that most of you have been faced with this problem.

"What can we as supervisors do to stimulate men to do their best? To see that they receive job satisfactions sufficient to insure their



G. W. Neal, superintendent, Chattahoochee Valley; C. E. Neal, division engineer, Northwestern Pacific.



H. S. Tolman, general bridge & building supervisor; H. W. Kellogg, assistant chief engineer—both C&O.



A. R. McGuire, roadmaster; W. G. Reppell, chief engineer—both representing Manufacturers Railway Company.



J. J. Quinn, supervisor track; L. Keiser, supervisor track; W. D. McInnes, trainmaster; W. L. Schlagler, engineer track & struct.; Ralph I. Frame, supervisor track—all NYC Transit.



W. A. Kirkpatrick, rdm; M. L. Haverland, supv. wk. equip., S. E. Tracy, supv. wk. equip.—all CB&Q; A. H. Whisler, asst. to pres., Frank Speno Railway Ballast Cleaning Co.



T. A. Spatafore, roadmaster, Milwaukee Road; Clarence E. Hotz, roadmaster, Southern Pacific Company.



A. L. Fridley, field representative, Hubbard & Company; R. G. Simmons, general roadmaster, Milwaukee Road.



H. E. Michael, manager sales service, Matisa Equipment Corp.; and E. L. Anderson, chief engineer, Frisco.

dedication to the welfare of their enterprise—and that I can assure you is essential if we are to keep step with this dynamic, changing age.

"Although wages and working conditions are important, I think we may safely conclude from past experience that we cannot pay a man enough money nor make his working hours short enough to insure his loyalty nor to induce him to put forth his best effort—nor to take pride in his craftsmanship.

"Any employee likes to know that he personally, and the group he works with, is making a positive contribution; this is as important to him as his rate of pay or his hours of work. He wants to know things about his company—the why of its operations, and its policies."

To cope with this situation he offered a few suggestions, admittedly "very sketchy and grossly over-sim-

plified." He would do these things:

1. That we specifically deal with the problems of people as individuals, rather than numbers on the payroll.

2. That we appeal to the strength in a man's character—courage, self-reliance, pride in his craft, ambition—and not to his weaknesses, greed and laziness.

3. That we help the growth and development of each personality on the payroll.

4. That we decide, as people who direct the work of others, to get things done through the process of consultation and explanation, in order to give everyone with whom we work an opportunity for participation. "There is no one thing needed more today in employment relations than this knowledge of being an important part of our organization."

"Granted that this is not easy, but

really extremely difficult; that it makes our individual jobs many times more arduous; that it is much easier for us to give commands—each of us here call up experiences in our own past to prove its soundness.

"If we are really interested in succeeding in reaching our full potential, then we must see that people we supervise get inner satisfaction as well as material satisfactions from their daily employment experience. There is no short cut."

Another management speaker—J. P. Newell, vice-president, Pennsylvania—dwelt on the responsibilities facing maintenance-of-way supervisors for spending the money allotted to them in the most judicious manner. Based on 1955 figures, Mr. Newell estimated that the supervisors are responsible for spending about a billion dollars a year, or an average of \$390,000 per

## Camera at the Conventions . . .



H. T. Bradley, val. engr., Missouri Pacific; C. B. Martin, val. engr.; M. Friedman, ch. val. engr.—both NYC; J. N. Smeaton, val. engr., CNR; H. Shinkle, val. engr., Santa Fe.



H. M. McFarlane, vice-pres., Cullen-Friestadt Co.; M. J. Hubbard, assistant chief engineer, C&O; G. W. Benson, superintendent bridges, Central of Georgia.



Joseph A. Jorlett, engineer-structures, PRR, as president of the B&B Association, was in charge of the meeting of that group.



William Hayduk, bridge and building engineer, New York Central; Joe Simmons, vice-president, Rust-Oleum Corp.



P. V. Thelander, assistant chief engineer; L. J. Deno, division engineer—both Chicago & North Western.



R. G. Weaver, roadmaster; and W. O. Allen, roadmaster—both representing the Seaboard Air Line; M. E. Perdue, sales representative, Kershaw Manufacturing Company.



A. B. Chaney, engineer maintenance of way; W. H. Hobbs, chief engineer; R. H. Carpenter, district engineer; Lee Mayfield, assistant engineer—all Missouri Pacific.

year for each supervisor on a national basis. "The immediate problem that you have confronting you," he said, "and where you will be individually responsible on the road ahead, is how you are going to spend this money—how are you going to secure the greatest benefit for each dollar that you expend?"

Some of the answers to the questions he raised are already known, Mr. Newell declared, but he said that these may not be sufficient—that the problem is much greater than merely getting the greatest possible value from the expenditure of a billion dollars a year. The real problem, he said, is to increase efficiency to such an extent that the same standard of maintenance will be obtained for less than a billion dollars.

While the future will present many problems, Mr. Newell feels it will represent a "challenge for

those who are willing to avoid complacency and who are interested in tackling and solving the problems which they will encounter—with the exhilaration that comes from accomplishment, and the contentment in the knowledge of a good day's work well done. It is a challenge for those who are anxious to move ahead to positions of greater responsibility."

R. E. Johnson, vice-president, operations, Rock Island, had quite a bit to say about the need for getting the track forces to spend more time doing actual work on the track. During a recent inspection trip, he asked several roadmasters how much time their forces spent doing such work. "Frankly," he said, "I was amazed to hear that their estimates of the average was something like 35 per cent of the time. I have not determined to my own satisfaction that these figures are correct.

They are, no doubt, controversial, but, irrespective of their validity, they give us some idea of the distribution of time and maintenance forces."

What this means, said Mr. Johnson, is that only 35 per cent of the time of track-maintenance forces is spent "in exertion directed to produce a safe, good-riding, dependable track." Which means, in turn, that 65 per cent of the time is spent on other things, and "ways must be found to reduce time on this secondary work by checking and programming the work, then developing more ingenuity in its accomplishment, so that we can spend more time on the primary work. Wouldn't this give us better track for the same cost and help to put us in a better position to compete more effectively?"

Some of these "time-consuming secondary items" were mentioned



F. S. Chесelski, assistant master carpenter, GN; W. A. Sweet, general foreman bridges, buildings & w.s., AT&SF.



G. R. Collier, dist. engr.; E. A. Royalty, superv. rdwy. equip.; F. W. Morrow, superv. rdwy. equip.—all AT&SF.



W. A. Maxwell, district sales manager, Ramapo Ajax; W. H. Huffman, assistant engineer of maintenance, C&NW.

#### NEXT CONVENTION—When and Where

Sept. 23-25, 1957, Conrad Hilton Hotel, Chicago



C. E. Neal, division engineer, NWP; J. R. Safley, bridge and building supervisor; J. D. Trulove, bridge and building supervisor—both Southern Pacific.



William Dolyniuk, roadmaster; T. S. Bean, general superintendent M/W shops & equipment; Fred C. Rice, roadmaster; Clarence E. Hotz, roadmaster—all SP.



A. L. Sams, office engineer; H. F. Davenport, assistant to division engineer—both Illinois Central.



R. C. Baker, engineer structures, C&EI; Dr. Joseph Bigos, director research, Steel Structures Painting Council.



A. D. Reed, master carpenter, CB&Q; W. L. Short, bridge inspector, MP; H. M. Harlow, asst. gen. superv. b.&b., C&O.

by Mr. Johnson. They include weed and brush control, the construction and maintenance of right of way fences, equipment breakdowns, and loss of time in getting to the job.

Mr. Johnson feels that we can find more effective and efficient ways to do this secondary work. "The prizes in life go to those who develop a better way of doing something old, or invent a better way of doing something new which makes the old unnecessary."

Mr. Johnson also stated that "if under-maintenance is wrongful, so is over-maintenance. If we misallocate any of our total expense money, we become less able to whip our competitors. There are those who would gold-plate their railroad if they could get management to supply them with enough men and materials. Correct standards, accurate cost analysis and good common sense should guide us all. . . ."

#### NEW OFFICERS— B & B Association

These officers were elected to direct the affairs of this association during the coming year: President—R. R. Gunderson, engineer maintenance of way, Western Maryland, Baltimore, Md.; first vice-president—W. H. Huffman, assistant engineer maintenance of way, Chicago & North Western, Chicago; second vice-president—M. H. Dick, editor, Railway Track & Structures, Chicago; third vice-president—B. M. Stephens, assistant to executive vice-president, Southern Pacific Lines, Houston, Tex.; and fourth vice-president—H. D. Curie, master carpenter, B&O, Garrett, Ind. L. C. Winkelhaus architectural engineer (retired), North Western, Chicago, was re-elected treasurer.

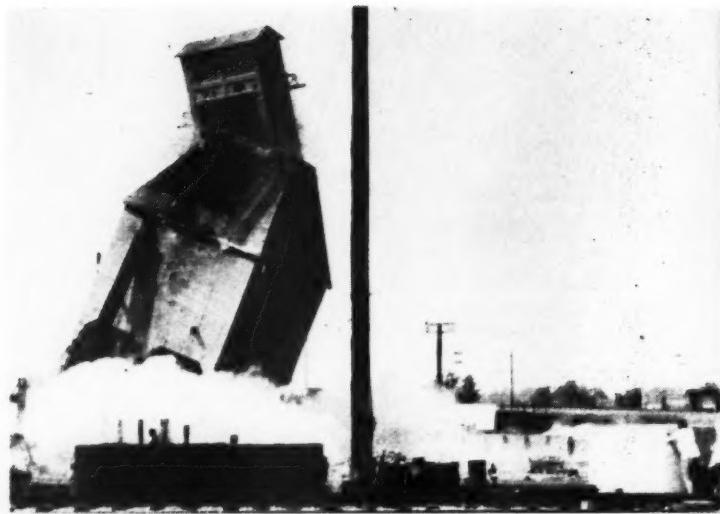
New directors are: J. M. Lowry, chief engineer, Cotton Belt, Tyler, Tex. (re-elected); T. M. von Sprecken, assistant to chief engineer, Southern, Washington, D. C.; and H. A. Matthews, gen. fore. b. & b., Frisco, Amory, Miss.



**R. R. Gunderson**  
President-Elect  
Bridge & Building Association



1 AN OLD COAL WHARF, built in 1923 on the RF&P at Alexandria, Va., is demolished . . .



. . . TO MAKE ROOM for a new freight car repair shop at Potomac Yard. First shot removed four legs (photo No. 1) and second shot (above) . . .



3 DEMOLISHED the remaining five legs, and the structure came crashing to the ground. The 1000-ton capacity coal wharf was

demolished August 28. Project demonstrates use of dynamite in such a manner as to get controlled results.

## News Briefs in Pictures . . .



COAL-HANDLING TRACTOR, a standard rubber-tired unit, was converted to an extra-duty rig through the addition of a custom-built boom. Owned by the Indianapolis Power & Light Co., this Tournatractor has an electrically-operated boom which folds out of the way for normal use of the tractor's dozer blade.



# WHAT'S THE ANSWER?...

... a forum on track, bridge, building and water service problems

## Lining Turnout Closure Rails

What is the best method of lining the curved closure rail of a turnout to fit the offsets shown on the standard turnout plan? Explain.

### Use Milled Plates

By CARL H. JOHNSON  
Assistant Engineer, Illinois Central,  
Chicago

A turnout installed with milled turnout plates and proper-length closure rails will give best lining of the turnout closure rail for the following reasons:

**First**—Milled plates in back of the heel of the switch initiate the proper curve for the turnout. Furnished closure rails will provide the proper curve length between heel of switch and toe of frog to meet the offsets shown on standard turnout drawings.

**Second**—In lining curved closure rail, assemble all of the turnout material (switch, frog, guard rails and turnout rails) on switch ties, then bolt the turnout parts together but do not spike. After this is done, line the main-line rail and spike down according to the tie spacing shown on the standard drawing. Next, spike closure rails to meet the offsets shown on the drawing.

This will provide correct curve and line. Foremen should check with supervisor or roadmaster to see that they have the up-to-date standard turnout plan.

### Spike at Offset Stations

By G. B. McCLELLAN  
General Roadmaster, Texas & Pacific,  
Forth Worth, Tex.

It is imperative that the tangent gage line through the entire turnout be placed in perfect alinement before an attempt is made to line the curved closure. Then, the offsets must be measured at exactly 90 deg to the tangent.

To whatever extent these two requirements are disregarded, distortions in the final alinement will surely result.

In the shorter turnouts, where the distance from the stock rail bend to the switch heel is short, the alinement of the tangent rail behind the switch heel may be, in some degree, adversely affected by the stock rail bend being improperly made. The importance of locating the bend at the proper distance ahead of the switch point and to coincide exactly with the angle of the switch, is such that it should never be left to guess work; the location should be determined by actual measurement, and the bend should be checked with a template unless the work is done under the practised eye of an experienced man of unfailing judgment.

The bolts must be tightened in all of the joints in the closure rail before the lining is undertaken. When the joint bars are fitted snugly and drawn up stiffly by tightening the bolts, the curvature will be continuous through the

joints. A regular curve in the rail cannot be obtained unless the joints have thus been stiffened.

When the rail is spiked at the offset stations, it should be fully spiked to the tie nearest each station, and the spikes driven entirely down while the rail is held in position. Nothing is to be gained by "tacking" at the offset stations and then going over it again—if the proper procedure has been followed up to this juncture.

### Tack Spike to Line

By FRANK PURCELL  
Roadmaster, Nickel Plate, Ft. Wayne, Ind.

The turnout lead length must agree with the length shown on the plan. The switch ties, particularly those through the switch plates, must be correctly spaced, and the line, or through rail, put to good line throughout the turnout before making measurements. The location of the offsets should be correctly measured and care used to see that offset measurements are made at right angles to the line rail. A man with lining bar should position the

Answers to the following questions are solicited from readers. They should be addressed to the What's the Answer editor, Railway Track and Structures, 79 W. Monroe St., Chicago 3, and reach him at least five (5) weeks in advance of the publication date (the first of the month) of the issue in which they are to appear. An honorarium will be given for each published answer on the basis of its substance and length. Answers will appear with or without the name and title of the author, as may be requested. The editor will also welcome any questions which you may wish to have discussed.

### To Be Answered in the January Issue

1. To what extent is it desirable to construct permanent set-off locations of sufficient size to accommodate the entire complement of equipment used by large mechanized gangs? At what intervals should they be placed? Explain.
2. What is the best method of renewing the chords on ballast-deck timber trestles when the deck timbers are not to be renewed? Explain.
3. What methods may be used to renovate the exterior surfaces of old brick structures? Explain.
4. When tie renewals are made without raising the track is it necessary to surface track out of face afterward? Why? If so, when should the surfacing work be done? Explain.
5. What are the advantages of using commercially pre-dried sand on locomotives? Disadvantages? Explain.

rail as the measurements are made, and the rail should be tack spiked both inside and out as the work proceeds.

After all offset points have been set, the alignment of the closure rail should be checked by eye before final spiking. The tack spiking allows for easy correction of any irregularities that might result from an improper measurement.

It is sometimes necessary that a small amount of lining be done by eye through insulated joints and where turnouts are from sharper curves. The difficulty with alignment on the sharper curves usually occurs in closing with the frog; to correct this situation it is sometimes necessary to adjust back through a considerable portion of the closure-rail curve.

#### Spike Line at Stations

By MAINTENANCE FOREMAN

With the unbroken line rail spiked in place and lined, set and spike the frog at gage. The turnout should be lined through the switch.

Place the curved switch point, heel filler and curved closure rails together, connecting them to the toe of the frog, which is already spiked to gage.

Our road uses prints showing distances along the unbroken line starting from the switch heel joint, usually in increments of 10 or 25 ft. This gives three or four offset points depending on the length of closure. The offsets are given from the gage of the unbroken line to the gage line of the curved turnout closure rail.

With a steel tape, measure the distance along the unbroken line from the switch heel exactly as shown on the print. Mark each offset distance on the rail as each point is measured out. This prevents any confusion and need for rechecking the print while lining is in progress. Put the print away and take out your pocket rule. This rule should be graduated down to sixteenths at least. Two or three men with lining bars line the curved closure rail while the foreman measures the distance, gage to gage exactly as shown on the print. Measurement should be at right angles to the

straight rail. Spikes are then driven on both sides of the rail in the nearest tie to the rule. Recheck the distances after the spikes are down. Move to each station and spike it to the offset. After all points are spiked walk back and sight along the curve. If it looks good the curve is ready to spike. When spiking, full care should be taken not to draw the rail out of line.

If, after spike lining, the curve does not look good, it is possible that one or more errors have been made:

(1) If the unbroken line is not lined properly, a kink in the line rail will show up on the curve also. This will correct itself when the complete turnout is lined.

(2) If a second-hand frog is being used, the toe could be bent causing a kink at the frog.

(3) Perhaps an incorrect closure length was used.

(4) A kink at any joint along the curve could be caused by bolts not fully tightened. As the curve is put in a loose joint will stick out.

(5) In rare cases, the information on the print may prove to be incorrect.

## When Widening Embankments

When widening embankments, what methods should be employed or precautions taken to insure that the added material will bond with that of the existing slope? What, if any, conditions require special treatment? Explain.

#### Cites AREA Recommendations

By J. T. FITZGERALD

Engineer Maintenance of Way,  
Rock Island, Chicago

The answer to this question is very well covered in the AREA Manual (1953) under Specifications for Formation of Roadway, Item D, Work in the Vicinity of Operated Track, Paragraph 3, Plowing Slopes: "Whenever an existing embankment is raised or widened, the slope of the existing bank shall be deeply plowed in order to bind the new material thoroughly to it."

When we were using dump cars it was somewhat of a problem to get the vegetation cleared from the slope when bank widening. However, under present practice most of this work is performed by either bulldozers, bulldozers with scoops, or draglines. With these types of equipment it is relatively simple to scarify the slope where the material is to be placed before the deposit

is made. It is essential that this scarifying be done where there is sod or vegetation on the slope to be widened.

#### Suggests Ideal Procedures

By ROCKWELL SMITH

Research Engineer Roadway, Association  
of American Railroads, Chicago

Observations on numerous sections of the railroads have confirmed the writer's belief that routine and poorly executed bank and fill widening have often resulted in greater instability of the sections rather than the improvement and higher standards for which the operation was designed.

Good practice involves a number of principles which should be considered for all such operations ranging from routine widening of low embankments to restoration of slipping fills.

There is still an appreciable tendency, rapidly changing, however, to consider soil as just plain dirt and not as an engineering material. The key to the situation is to consider soil as an "engineering material," connoting definite properties that are important in its use in an engineering structure such as a railroad embankment. While these properties are not yet as well defined as those for steel or concrete, certain factors are similar. Steel is not joined without a splice or a weld and two sections of concrete must be bonded if they are to act as one. Exactly the same principle applies to soil structures. Therefore, it is of first importance in widening operations to bond the new with the older portion.

The ideal condition would entail the use of material for widening similar to that used in the main bank. This would insure homogeneity. Further, soil material exhibits different properties at different moisture contents, and a reasonable approximation of moisture contents can be of assistance in obtaining good results. As an example the use of wet clay against a dry-clay embankment will result in differential shrinkage of the new material and an open crack at the junction of the two. This, open to

rains, could create conditions very favorable for sloughing.

It has been customary to construct widening by side dumping from the track and blading over the slope. This usually provides a relatively thin slope covering of loose material against a fill that has been subject to densifying traffic and continued maintenance for years. This slope covering will not act as a unit with the old fill. It is subject to easy water penetration to and above saturation point where cohesive soils, at least, have comparatively little shear strength and sloughing is not unusual. The presence of a layer of vegetation between the old and the new portions further destroys homogeneity and induces a plane of weakness into the embankment. This of course, should be removed.

With the above considerations in mind the ideal widening job would then involve the use of similar material with similar moisture and density. The correct construction procedure would necessitate the elimination of the vegetation and the formation of steps on the old slope, followed by the placement of the new soil material in uniform layers rolled to uniform density. Further ideal procedure would be

the use of the old organic material and any topsoil from the material source for capping the new slopes to produce a quick vegetational cover. Plant growth is a sure and potent dessicating agent which can prevent saturation.

The above discussion is, as stated, for ideal conditions. It is more probable in practice that these conditions cannot be met, but they should be the basic factors. The use of sandy materials on the outside of clay fills is good practice also. Soils of this character have high internal strengths, they drain well, are easily compacted and bond well into the clay. Any bank-widening entirely by side dumping from the surface of the old grade should involve material of the granular type. The use of clay or cohesive materials on the outside of granular embankments is usually bad practice unless special provisions for drainage are taken and the moisture and the compaction controlled. The writer has observed several installations of this type where the clay has acted as a dam to build up a reservoir of water under the track, ultimately resulting in a slide of serious proportions. Where such procedure is necessary, drainage

outlets from the more permeable material are essential. All widened slopes should be two-to-one or flatter.

There are a number of special cases also where further caution is required; namely those sections where slides are occurring or have occurred in the past. An analysis of the forces involved indicates that material placed at the top of the fill will exert appreciably greater force toward sliding than material placed lower down, and material placed at the toe of the slide will exert a stabilizing or buttressing effect. Therefore, in such cases any widening must proceed from the bottom and should extend laterally at the bottom beyond the width required to produce the planned widening at the top. This is good general procedure for this special case, assuming that other stabilization measures are not required. As for all special cases the situation must be analyzed carefully.

The writer is fully aware that the economics and the practicalities are usually such as to prohibit full realization of ideals in work of this kind. These ideals are suggested here as a guide and the closer they can be realized the greater the probabilities of good results.

## Pouring Bearing Areas

When pouring bearing areas for the support of bridge or column loads, should the concrete masonry be cast high and bush hammered? Poured to exact elevation? Left low and grouted? Explain.

### Leave Low

By H. A. MATTHEWS  
General Foreman,  
B & B Water Service,  
St. Louis-San Francisco, Amory, Miss.

We prefer the method of pouring the foundation from  $\frac{1}{2}$  in to  $1\frac{1}{4}$  in low, depending on the size of the foundation and weather conditions, and then grouting. In this manner we can set a bridge or a column load to the exact elevation, shim on the foundation and then grout, using a mix which is as dry as possible. This method makes a more durable wearing surface and a better bearing than either of the other methods mentioned.

We have found it difficult to pour to the exact elevation in large bearings on account of shrinkage in the curing. Also, in pouring the foundation high, much more equipment is required on the job to cut down

the bearing and then get the required surface.

We also use another method where we pour the foundation 4 in to 6 in low, and then place a properly reinforced precast cap under the bearing. This method also requires a small amount of grouting, but by pouring the cap after the foundation has settled and partially set up it is possible to get the correct elevation without undue labor and equipment.

### Pour to Elevation

By L. P. DREW  
Assistant Chief Engineer,  
Union Pacific, Omaha, Neb.

Whenever possible, bearing areas for the support of bridges particularly, and also columns in buildings on concrete masonry, should be

poured to the exact elevation and neither bush hammered nor grouted to bring to correct elevation.

This can be accomplished if a good instrumentman is available to set top of masonry elevations just prior to the pouring of the last concrete so that no expansion, contraction or distortion of forms will affect the elevation as the concrete is poured. It is also advisable to have these elevations checked after the concrete is poured—but while still wet—so that the final finish can be brought to exact elevation and finished with a wooden float or a steel trowel.

If bearing areas are poured high and then bush hammered down, a rough, raw surface is left which must be grouted before perfect bearing can be secured. On the other hand, if bearing areas are left low for grouting, there is the added expense of leveling the steel on steel wedges which, at best, do not furnish a perfect bearing, then grouting in with a mixture of cement and sand, which may or may not effect a perfect bearing.

In the case of large shoes or heavy columns, there is an advantage in pouring a thin grout, not to

exceed  $\frac{1}{8}$  in as the shoe or column is set, allowing it to squeeze out in order to fill in the voids and provide a uniform distribution of load over the entire area.

#### To Exact Elevation

By V. D. RAESSLER

Supervisor Bridges and Buildings,  
Illinois Central, Memphis, Tenn.

It is my definite opinion the most desirable method is to pour the bearing area for support of bridge or column loads to the exact elevation. The exact elevation can be determined and masonry cast accordingly with little or no extra effort, whether it is in connection with new construction or on repair work being performed under traffic.

To pour a bearing area high and bush hammer it to exact elevation

costs more as it requires extra time, labor and equipment. Often the space in which to do this work is limited, making bush hammering a difficult task. Also, the exact elevation must then be determined for this operation. Another objection to the method of pouring the area high and cutting it down is that it creates a hole or low spot where water can accumulate and stand around bearing plates or shoes. This is particularly true where tops of new piers are built high and only the bearing areas are then bush hammered to a lower elevation.

To leave the bearing surface low and grout to exact elevation also has some disadvantages that, in my opinion, make this method undesirable.

Before building up with grout, the exact elevation must be determined. If bearing plates or shoes are in place, they must be blocked

or shimmed to correct position. This operation, along with the grouting, requires extra time and increases labor costs. Thin layers of grout are difficult to maintain under bearings. They have a tendency not to bond well to other masonry and often start breaking and chipping around the edges when under traffic.

There are improved materials on the market today for purposes such as this that create a very hard surface, set up fast, have no shrinkage and possess other desirable features. However, in most cases, grouting under bearing area does not give the best results. Frequent inspections are required and, over a period of time, maintenance costs will increase.

It is my opinion that, unless there is some special reason for not doing so, the masonry should be cast at the correct elevation.

## Painting Ventilation Requirements

What are the minimum ventilation requirements of shop facilities used for the painting of diesel locomotives and cars? How can these requirements best be met? Explain.

#### Air Velocity Governs

By CHIEF ENGINEER

The ventilation requirements for painting cars and diesel locomotives are controlled by the minimum air velocity required over the painted surface. This velocity should be at least 100 lin ft per minute but need not be any more than 200 lin ft per minute. The method which we have formulated for meeting these requirements is this:

We are constructing a continuous sheet-metal hood centered over the track which the cars to be sprayed occupy. This hood is 16 ft wide by 50 ft long, and covers the area occupied by one freight car. The underside of the hood is covered with disposable paper filter sections at an elevation of 16 ft above the top of rail. Air movement through the filters is provided by three 48-in propeller fans, each powered by a 3-hp motor. These fans are designed to exhaust 24,000 cu ft per minute of air at  $\frac{1}{8}$  in of water static pressure. The propeller fans are mounted in the top of the hood. Above the propeller fans we are mounting exhaust vents which are designed with adjustable baffles to recirculate 75 per cent of the air to the

spray paint building during the heating season. (During the summer when no heat is required in the building, all air will be exhausted through the vents to atmosphere.)

In order to cut down the heating load, it is essential that as much of the air be recirculated as possible through the building. The only way we knew how to do this was to design this disposable paper filter area which removes the paint mist and protects the inside of the hood and the propeller fans from the need for excessive cleaning maintenance.

Heat in the building is provided partially by means of steam coils mounted in large openings in the walls of the building and partially by small vertical-type unit heaters strategically located. Each of the sources of heat will be controlled individually by thermostats.

To assist in bringing the movement of air over the surface being painted and to provide an invisible curtain which separates the car being painted from other shop areas, we are placing an air line along the floor on each side of the car. This air line will have small holes drilled in the top of the pipe every 4 ft,

more or less, and will be supplied from the shop air supply at about 100 psi.

#### Try "Open-Roof" Type

By H. R. PETERSON  
Chief Engineer, Northern Pacific,  
St. Paul, Minn.

Where the demand or facilities do not warrant the expenditure for mobile or permanent paint spray booths—which are equipped with exhaust power units for ventilation—an "open-roof" method may be used to meet minimum ventilation requirements when painting cars in shop buildings.

The "open-roof" method consists of gravity type ventilators which are rectangular and about 3 ft in height. They are usually made in units, each unit being about 10 ft wide by 7 ft long. Each ventilating system may consist of three or more units, providing a total area 10 ft wide by 21 ft long or larger.

This type ventilation system is installed in the roof of the shop and extends lengthwise with the paint track. Weighing about 10 lb per sq ft, it reduces the dead roof weight. No power is required for the "open-roof" gravity-type ventilator. Each unit has a capacity of about 12,200 cfm at a 20 deg F temperature difference at a height of 20 ft. The total capacity of one three-unit ventilating system will thus be about 36,600 cfm.

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Here's an Air Impact Wrench that's ideal for structural work and maintenance-of-way! It's the CP-610 Reversible Air Wrench. The CP-610's new impact mechanism delivers a 50% power bonus yet the wrench is 7 pounds lighter and 2 inches shorter than any wrench of equivalent rating. Its new design affords an absolute minimum of maintenance . . . requires 30% less air. For complete details write to Chicago Pneumatic today!

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## Widening Subgrade Shoulder

To what extent are the railroads warranted in widening the subgrade shoulder to permit greater use of off-track maintenance equipment? Explain.

### Justified at Many Locations

By J. E. GRIFFITH  
Assistant Chief Engineer, Maintenance of Way and Structures, Southern, Knoxville, Tenn.

The greater use of off-track equipment gives many more hours of productive labor regardless of traffic density. In many cases where the work is being performed under heavy traffic the time required to clear "on-track" equipment at sidings consumes 50 per cent or more of the time between trains.

Shoulders wide enough to permit highway trucks to be driven directly to the point where work is to be performed also enhance the safety of working conditions by eliminating the necessity of moving men, tools and material by motor and push cars.

Many cases have been found where the proper widening of the subgrade shoulder has also helped the roadbed conditions. This is particularly true where the fills are too narrow to offer proper support for present-day axle loads and speeds, and where cuts are too narrow to permit the side ditches to be far enough from the track section to prevent moisture from softening the area directly under the track.

The ideal widened subgrade shoulder must provide safe side clearance for machines and equipment which are to be left overnight or until the force returns to put them back into operation. It should not be built higher than the toe of the ballast section and should have a slope from the ballast section to the shoulder of approximately 1 ft to 12 ft.

Each location along the railroad presents a different problem and surely there are many places where the cost of widening the subgrade shoulder could not be justified. However, there are many more places where the cost would be justified and more attention and study should be given this problem now than ever before.

The fundamental objective of railroading is to keep the trains moving with a minimum delay. The off-track equipment, including highway trucks, trailers, etc., of today opens a new field for maintenance men. In many cases the economies derived from this new

method of maintenance are surprisingly attractive.

The extent to which railroads would be warranted in widening the subgrade shoulders varies with localities and conditions. Serious study of this subject without prejudice will help us maintain our railroads more efficiently and economically, which in turn helps us in the war of competition. With other means of transportation receiving many aids which amount to subsidies, we cannot afford to overlook any method of improvement.

### Needed Badly

By F. N. BEIGHLEY  
Roadway Engineer, St. Louis-San Francisco, Jefferson, Mo.

Progressive thinking and the actual putting into practice of the mechanization of railroad track and roadway maintenance has raised this question.

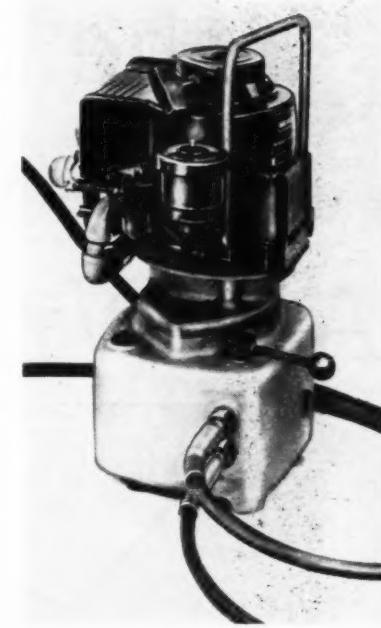
What is the most important piece of off-track equipment now in use? The truck. It is used primarily for the transportation of men, tools and supplies in a safe and expeditious manner. Highways have been located adjacent to a small portion of the railroad lines, and these, together with crossroads, permit ready access in level and rolling country. However, many miles of railroad are hard to get to where no roads exist. Such conditions require access roads on the right of way. These can be provided by forming a roadway with a slight ditch for drainage, using a road patrol grader and a bulldozer. Where a railroad is located in wet or marshy country, the access road will have to be built as a widening of the subgrade shoulder.

In addition to providing access roads for the trucks, set-off "warts" for mechanized tie and surfacing gangs as well as rail-laying equipment, if provided, would permit 30 min to one hour more on-track time per day. These warts should be at least 200 ft long and spaced one mile apart. At a later date the space between them could be filled in, making a continuous subgrade shoulder access road to be used for many different types of both on- and off-track equipment.

## PRODUCTS OF THE MANUFACTURERS

. . . new, improved

- equipment
- materials
- devices



### POWER PUMP FOR HYDRAULIC RAMS

A LIGHTWEIGHT, gasoline-operated hydraulic pump for use with all single or two-way Simplex "Re-Mo-Trol" hydraulic rams is now available. This power pump has a displacement of 30 cu in of oil per minute and, it is reported, will raise a 60-ton capacity ram 1 in in half a minute.

This new pump unit, known as No. 798 GM, is equipped with a 1½-hp gasoline engine which provides continuous operating pressure of 5,000 psi and intermittent pressure up to 10,000 psi. The unit is adaptable to Simplex "Re-Mo-Trol" rams of from 10 to 600-tons capacity. The set-up will provide lifting, pushing or pulling force in any direction and allow the operator to remain a safe distance away from the operation. It is said that the combination can be used to lift and lower machinery, align beams, straighten buckets and forms and pre-stress concrete. Templeton, Kenly & Co., Dept. RTS, 2525 Gardner Road, Broadview, Ill.

(More on page 58)

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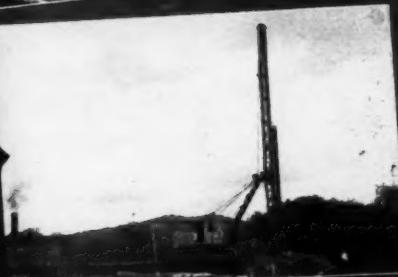
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 to  
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 Capacity



CRANES  
 3/4 yd.  
 to  
 2-1/2 yd.  
 Capacity



LIFTING  
 CRANES  
 10 to  
 50 ton  
 Capacity



DRAGLINES  
 3/4 yd.  
 to  
 3 yd.  
 Capacity



PULLSHOVELS  
 3/4 yd.  
 to  
 2-1/2 yd.  
 Capacity



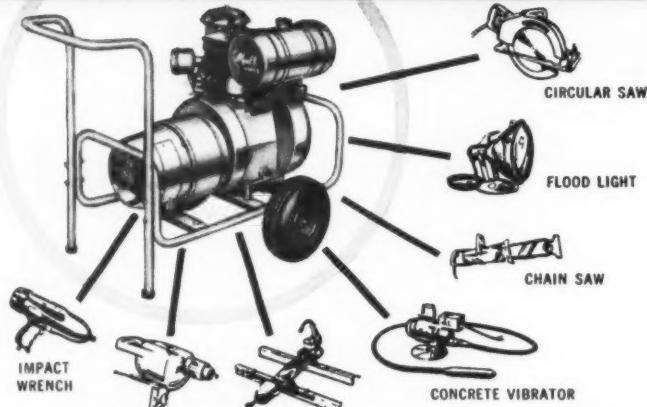
TRUCK  
 CRANES  
 20  
 and  
 25  
 tons  
 Capacity



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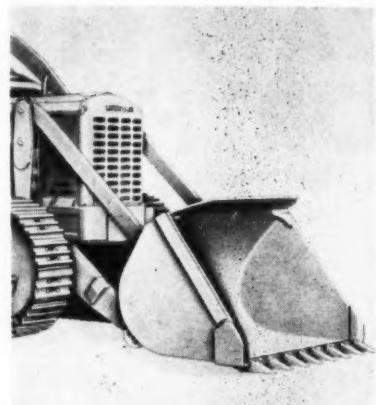
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## New Products (Cont'd)



### EXCAVATOR BUCKETS INCREASE VERSATILITY

ATTACHMENTS for Model 977, 955 and 933 Traxcavators have been made available in the form of new buckets for increased versatility and work capacity. Designed to fill specialized needs in quarry and mining operations, rock handling, pavement removal and similar jobs, the new buckets include heavy-duty, quarry and skeleton rock models. The new quarry buckets (shown above) are available for all three models of Traxcavators. They are constructed of heavy abrasion-resistant steel and are equipped with welded-on tooth adapters and removable tooth tips. They range in capacity from 1 cu yd, for the Model 933 Traxcavator, to 2½ cu yd for the Model 977.

The skeleton rock buckets are available for use with Models 955 and 977 Traxcavators. They are designed to retain large rocks while letting dirt and small rocks sift out. Capacity of the Model 995 skeleton rock bucket is 1½ cu yd; the model designed for use with the Model 977 Traxcavator is rated at 2½ cu yd. Both are equipped with welded-on tooth adapters and removable tooth tips. The new heavy-duty bucket for use with the Model 977 Traxcavator is 77½ in wide and is rated at 1½ cu yd capacity. It has been designed for concentrated digging action in dense, hard-to-penetrate materials and is reported to be especially useful for loading narrow cars or hoppers. *Caterpillar Tractor Company, Dept. RTS, Peoria, Ill.*

### FRONT WINCH FOR LIGHT-DUTY TRUCK

FACTORY MOUNTED, a front winch of 6,000 lb nominal capacity is now available for the light-duty, four-wheel-drive International model S-120 (4x4) truck.

The winch is driven from the left side of the T-10 transmission of the truck by a one-speed forward and one-speed reverse side-mounted transmission

# For Track at its Level Best . . .

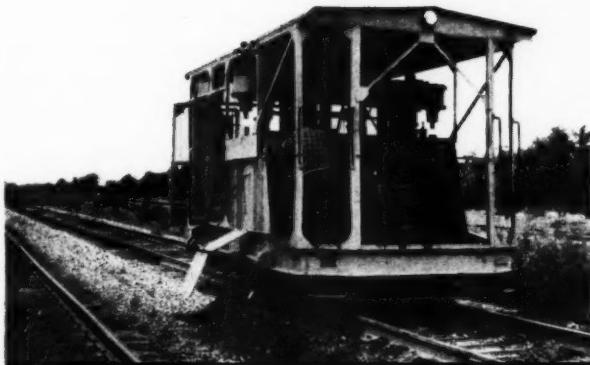


## PULLMAN-STANDARD Power Ballaster

With a production rate of 500 to 700 feet an hour, a Pullman-Standard Power Ballaster, run by a single operator, can be efficiently manned by a crew of 10 to 15 men. Case history studies made on 14 railroads prove that this unit will give more feet of finished tamped track per hour, with less labor and maintenance, than any other production tamper.

## PULLMAN-STANDARD Power Cleaner and Winch Car Team

For the first time both track shoulders can be cleaned simultaneously at 1000 to 1200 feet per hour with only four men. Even in multiple track territory, the shoulder plus half the six-foot are cleaned to a depth of eight to ten inches below the tie base at the same high rate and with the same low labor complement. Your ballast cleaning costs can be reduced by as much as 50%.



## PULLMAN-STANDARD Power Cribber

The Pullman-Standard Power Track Cribber gives you two cribs a minute, with a single operator. With a normal production rate of 100 to 225 track-feet per hour, its interchangeable 4-, 5-, and 6-inch digger tips enable it to crib efficiently and economically in any type of ballast, regardless of cementation.

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**Pier structure gets *New, Longer Life* with THORITE Nonshrink patch, THOROSEAL masonry sealer coat**

Structural concrete suffers deterioration from the elements. If these surfaces had been protected from water penetration, freeze and thaw cycle would not have caused these maintenance problems. Workmen are shown cutting out defective areas, patching with THORITE without necessity of forming and then sealing surface with THOROSEAL.



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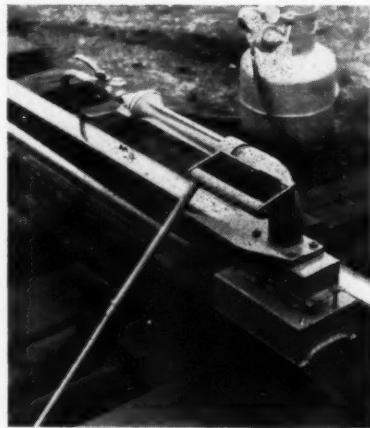
**STANDARD DRY WALL PRODUCTS, INC.**  
NEW EAGLE, PENNA.  
CENTERVILLE, IND.



THORITE 20-minute nonshrink, nonslump patching mortar has received international acceptance by men who know, Architect, Engineer and Contractor. THORITE requires no forming, permitting immediate completion of job.

**New Products (Cont'd)**

power take-off. This power take-off is controlled from the cab. The winch has a capacity of 375 ft of  $\frac{1}{4}$ -in wire rope or 270 ft of 5/16-in wire rope. International Harvester Company, Dept. RTS, 180 N. Michigan Ave., Chicago 1, Ill.



**RAIL HEATER FOR WELDING, HARDENING**

A PROPANE-burning heater for use in connection with welding of rail has recently been announced. In addition to its application in welding, the heater is also said to be effective in the treatment of engine burns. The manufacturer claims that application of the Teleweld "SE" heater to the engine burn area will reduce the hardness of the heat-affected metal from 125 to 200 points Brinell, thus eliminating or, at least, postponing spalling of the hardened metal. It is claimed that sufficient heat can be obtained by leaving the heater on the rail for four minutes with 30 lb of gas pressure to draw the metal hardness down to safe limits. Teleweld, Inc., Dept. RTS, 332 S. Michigan Ave., Chicago.



**IMPROVED TOOL SUPPLY CAR**

A TOOL AND SUPPLY car placed on the market some months ago, has been improved by the manufacturer to permit

the car wheels to clear track jacks when necessary, thus facilitating movement of the vehicle on the job. The 2000-lb capacity car, designed to carry ties, rail, supplies and tools, features all tubular construction. The car breaks in the center into two sections for ease in handling and transportation to and from the job. The sections can be used as truck seats when dismantled and, it is reported, can be easily and quickly hooked together. The deck of the car is of heavy mesh-expanded steel; the handle of the car is removable—it can be used on either end. The platform size is 48 by 45 in; the car weighs 70 lb per section, or 140 lb complete. Height above rail is 8 in. *Nolan Company, Dept. RTS, Bowerston, Ohio.*



#### LIGHTWEIGHT ELECTRIC HAMMER

A NEW lightweight electric hammer, delivering up to 1900 blows per minute, has recently been developed. Known as the H54U Electric Power Hammer, it is designed for general maintenance and construction work such as star drilling, demolishing, piercing, breaking, channelling, battering, chipping, digging, scaling, riveting, chiseling, etc. The tool weighs 12 lb, 13 oz and, it is reported, will drill holes in concrete up to 1½ in in diameter. Accessory packages are available to adapt the tool to a variety of applications. *Ingersoll-Rand, Dept. RTS, New York.*

#### ELECTRONIC SCALES

ELECTRONIC LOAD CELLS are employed in a recently announced line of weighing instruments. Two types of scales have been made available: A full-electronic scale in which load cells replace the conventional lever systems; and, a "Levetronic" system wherein a

## How to be TOP MAN

We cannot promise to make you president of the road . . . or boss of your department. But if you now read a "pass-along" copy of *Railway Track & Structures*, there are times you'd like to be "top man" on the list. Or have nobody below you, for that matter.

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#### WANTED

Mechanical Engineer with experience in power plants, heating, ventilating, air conditioning, piping. Electrical knowledge helpful. Headquarters Denver. Write qualifications to Denver & Rio Grande Western Railroad Company, Personnel Office, Rio Grande Building, Denver, Colorado.

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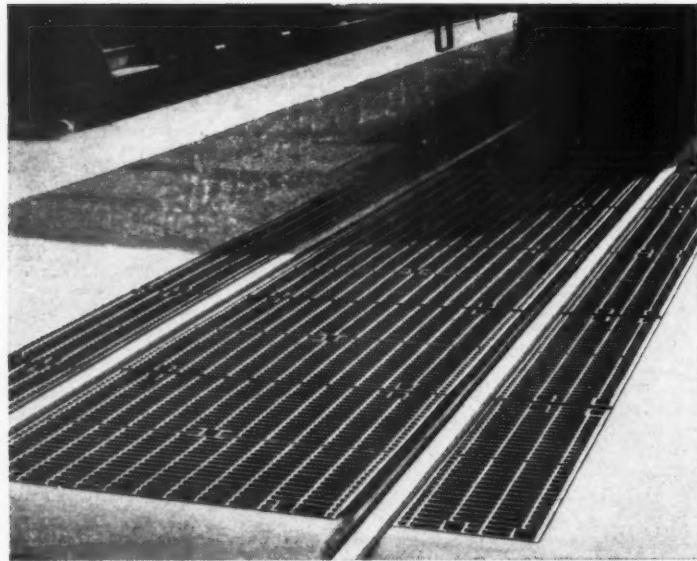
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## ELECTROFORGED® Grating by BLAW-KNOX

*"No maintenance at all.  
We haven't done a thing...  
except drive over them."*

The general car foreman had this to say about Blaw-Knox Electroforged® Steel Grating Crossings installed more than two years ago in the Santa Fe's Chicago coach yard.

What they drive over them, some 50 times a day, are three 4,000-pound lift trucks carrying about 4,000 pounds of brake shoes. Plus other vehicles, such as heavy ladder trucks.

These prefabricated sections of Blaw-Knox Steel Grating are easily installed. Open mesh self-cleaning construction permits good drainage, quick evaporation of snow and water.

Whether used for yard or road crossings, Blaw-Knox Electroforged Steel Grating Crossings last as long as the rails.

### Blaw-Knox Railway Equipment Representatives

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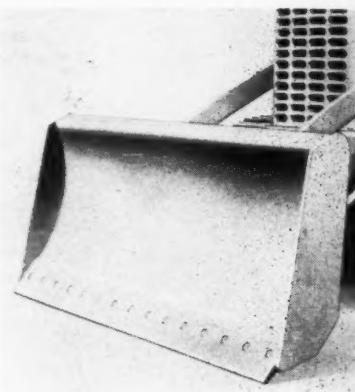
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**RAILROAD GRATING APPLICATIONS:** crossings • walkways • running boards • steps • tower platforms • exhaust fan guards • battery box shelves

## New Products (Cont'd)

conventional lever system is used with a load cell hooked in tension in the steel-yard rod. The scales incorporate such features as: Automatic balanced deduction; hold or memory circuits; automatic ranging; dual balanced knobs; net-gross switch; and printers with collective "print" and "weigh" buttons. *Fairbanks, Morse & Co., Dept. RTS, 600 S. Michigan Ave., Chicago.*



## EXTRA WIDE BULLDOZER BLADE

A NEW 104-in wide bulldozer blade attachment has been developed for the No. 977 Traxcavator. It is fastened to the lift arms with a bracket arrangement at the same point where the bucket connects and is adjusted by operating the standard hydraulic bucket controls. Its straight blade makes it useful for leveling, clean up and backfilling operations usually accomplished with the Traxcavator bucket. Its greater width makes it more efficient than the bucket for such work.

Owners of a No. 977 Traxcavator can now select the most suitable of two different dozer attachments: The new straight bulldozer blade attachment and the previously introduced No. 977A Angling Blade Bulldozer. *Caterpillar Tractor Company, Dept. RTS, Peoria, Ill.*

## HEAVY-DUTY IMPACT WRENCH

A RUGGED impact wrench has recently been made available which is designed for cool-running, durability and speed while delivering a steady power output. The wrench, which weighs 7 lb and delivers 1800 high-intensity impacts per minute, can be used for nut running, driving cap and lag screws, etc. The manufacturer claims that the wrench cannot be stalled or overloaded and that its power output is identical for operation either in forward or reverse. A specially-

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CTURES



**Bulldog anchor with 25% more grip . . .**

## UNAFFECTED BY FROZEN BALLAST

When moisture and freezing weather team up, they can work real damage to right-of-way. Ballast expands, heaves, freezes. BULLDOG Rail Anchors are particularly effective under these winter conditions. There's no flat bottom surface for heaving expanding ballast to press up against. It's simply diverted away from the anchor (see arrows, upper photo). That's why BULLDOGS won't shift or loosen their powerful 25% stronger grip.

Further, frozen ballast has no resilience, no give. This places an added burden on both the tie and anchor often causing excess tie wear and anchor slippage. You can reduce this wear and slippage to a minimum by making sure all rail is sufficiently and securely anchored. Use BULLDOGS and you can be sure it's secure. But use enough of them to be sufficient to meet your particular track conditions. Thus, load will be divided over more ties. The resulting lighter load per tie in

combination with BULLDOG's broad, deep and flat tie-bearing surface (whitened area on upper-left anchor) reduces tie wear to a minimum.

Only with BULLDOG can you get such high holding power. Only with BULLDOG can you get the broad, deep and flat tie-bearing surface. Only with BULLDOG can you be absolutely sure your rail will remain properly anchored throughout a severe winter season. Why not take a trial order of BULLDOG Rail Anchors now and prove these things yourself! True Temper Corporation, Railway Appliances Division, 1623 Euclid Ave., Cleveland 15, Ohio.

**Other True Temper Railway Products . . .**  
BULLDOG Ballast Forks, Weed Cutters, BULLDOG Shovels, BULLDOG Safety Rail Forks, Hammers, Sledges, BULLDOG Scythes.

**TRUE TEMPER®**

25% greater holding power

**BULLDOG RAIL ANCHOR**



## New Products (Cont'd)



### This maintenance machine is not tied to your tracks

One man, operating a modern Adams grader, drives via highway or along right-of-way to take care of scattered maintenance work without waiting to be transported by rail, and without need for a special crew. The grader goes to work immediately, cuts and cleans ditches, spreads ballast, widens shoulders, slopes banks, levels fill, builds grade for sidings, grades access roads, removes brush and weed growth, cleans up around stockpiles, water towers, coal docks, shops, yards, and does any other job required of it.

This modern grader is a big help in keeping maintenance up-to-date... fixes small troubles before they become major problems... saves expense and delays involved in postponement for work-train service.



Land, bordering track shoulders, can be leveled and cleaned regularly by a grader to maintain proper drainage. One man with an Adams slashes your payroll and machinery costs, saves time, eliminates sources of trouble before they develop.

No other grader offers the range of operating speeds found in the Adams

All Adams graders have 8 speeds forward, up to 25 mph (11 speeds including 3 optional "creeper" gears) and 4 in reverse to 13 mph for fast back-up in shuttle-grading.

Double-action hydraulic brakes assure quick, safe stops. When service brake on wheels is applied, brake holds transmission when it stops wheels. Machine won't slip.

Optional equipment adds to usefulness of grader. Scarifier rips out old asphalt, hard-packed dirt, roots, and stones. Dozer blade roots out brush, pushes debris off right-of-way, back-fills around culverts, cleans up spillage in yards. Snow plow and wing clear and spread snow in winter.

You can find out for yourself how an Adams moves big-yardage quickly.

#### A size ADAMS for every need

**Model 220** — 60 hp, 14,865 lbs.

**Model 330** — 80 hp, 20,500 lbs.

**Model 440** — 104 hp, 21,500 lbs.

**Model 550** — 123 hp, 23,500 lbs.

**Model 660** — 150 hp, 27,730 lbs.

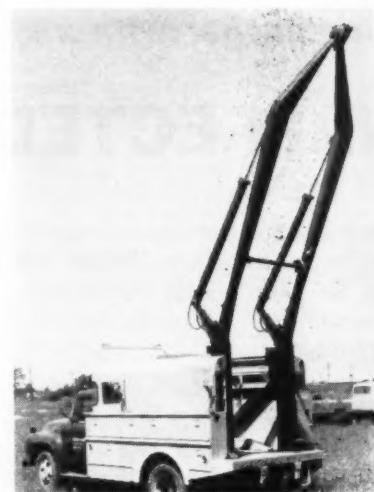
**Traveloader** — high-speed, heavy-duty, self-propelled, belt-type loader for picking up and loading into trucks from windrows or stockpiles. 55 hp gasoline or 60 hp diesel engine, 16,800 lbs.



designed centrifugal fan and ventilating system are incorporated to maintain a cool operating temperature. The manufacturer states that the wrench reaches maximum torque in 6 seconds. Several accessories can be attached to the tool with the aid of adapters to enable it to perform a variety of other jobs. Drill bits from  $\frac{3}{16}$  in to  $\frac{1}{2}$  in in size can be driven



as well as hole saws, masonry bits and thread taps. A right-angle head attachment is also available for close-quarter operations. The manufacturer is offering a free service certificate protecting the purchaser against any electrical or mechanical failure of the wrench from one year from the date of purchase. *Black & Decker Mfg. Co., Dept. RTS, Towson 4, Md.*



#### LIVE-BOOM HYDRAULIC DERRICK

A NEW TWO-LEGGED, live-boom hydraulic derrick with fabricated, rectangular side legs is now being manufactured. The new derrick, known as the Series 6700 is rated at 8,000 lb and, the manufacturer claims, has actually been tested



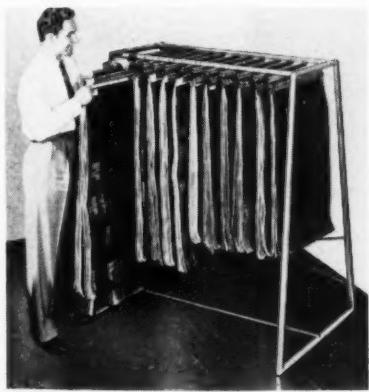
**LeTourneau-WESTINGHOUSE Company**  
Railroad Sales Division  
Peoria, Illinois  
A Subsidiary of Westinghouse Air Brake Company



at 14,000 lb. Truck-mounted, the derrick lifts 2,500 lb to the rear-body platform. Live-boom action is said to provide infinite lifting positions with a single drum winch.

Two standard sizes are available: a derrick 23 ft high for lifting poles up to 55 ft long; and, a 26-ft derrick for lifting poles up to 65 ft. The manufacturer reports that derrick legs can be furnished as specified by the user. Operating range is 195 deg—the derrick swinging from overhead storage to a position where workmen can thread the winch line from the ground. The legs of derrick are of the "bow-legged" design proportioned to provide uniform unit stress on either side of the derrick.

Cylinders for side legs are mounted on special cam and roller operated arms whose movement is such that cylinder leverage is increased at the heavier load-lifting ranges. Among optional equipment available for the derricks are a stiff leg for extra-heavy work, a cradle for overhead storage of a digger, and a roller head sheave which prevents side pull from damaging the winch line. *J. H. Holan Corporation, Dept RTS, 4100 W. 150th St., Cleveland 11, Ohio.*

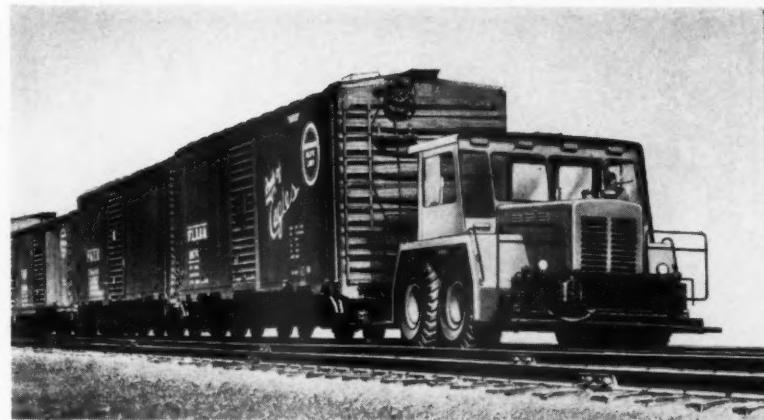


### "GLIDER" HOLDER FOR BLUEPRINTS

TWO GIANT SIZES of blueprint holders have been made available to be used in the "glider" blueprint rack in addition to the manufacturer's regular-sized plan holders.

The regular model, or "C-1" standard plan holder is 24 in long; the new sizes are the "C-2" model which is 36 in long and the "C-3" which is 48 in long. The holders are designed to hold any thickness of set without punching holes in the prints. Whole sets or single sheets of blue prints can be slipped into the holder and clamped tightly by simply turning the thumbscrews. Each plan-holder clamp holds from 1 to 100 sheets; one sheet can be removed without removing the others.

Constructed of steel, the rack has a clearly visible index showing the location of sets of prints. *Momar Industries, Dept RTS, 4323 W. 32nd St., Chicago 23, Ill.*



## Your freight yard tangle: Straighten it out -- with SwitchMobile

With business at a high level these days, activity in freight yards and sidings is also at a peak. There are more freight cars on your sidings than ever before—and more of them are in motion. Your switch engines are busy—maneuvering to spot cars as needed, positioning as fast as they can on a crowded, complicated track network. But they lose a lot of time waiting for clearance on main lines, switching out and putting back cars that interfere with the needed spotting.

You can solve this problem with a SwitchMobile—the new LeTourneau-Westinghouse rubber-tired switcher with 16 mph go-anywhere mobility for off-track or on-track travel. SwitchMobile can cut directly across yards, fields, ditches, or travel by highways and streets to next assignment.

#### Go-anywhere mobility

Big, low-pressure tires, 5½' high, 2' wide, make it possible for this switcher to go anywhere. Tracks, right-of-way, pavement, black-top are routes—not obstacles—to SwitchMobile. Rig handles easily in traffic—in freight-yard or city street.

#### Twice the traction of steel wheels

208 hp diesel engine, through torque converter and constant-mesh transmission, provides power for pushing or pulling strings of cars. Big, rubber-tired wheels straddle rails, ride on

ballast and tie ends. They give a 60 percent coefficient of friction—double the tractive effort of steel-wheeled switchers rolling on smooth steel rails. Machine exerts 36,000 pounds of rim-pull on load...can roll 1,250 tons of freight from a dead start. Couplers slide 35° left or right.

#### Tailored to RR requirements

SwitchMobile is not merely an automotive vehicle adapted to rail work. It's a genuine railroad switcher, designed and equipped for full yard service. It has locomotive-type operator's cab...air hoses and couplers at both ends. Hand rails, steps—all meet ICC specifications.

Air to operate brakes on SwitchMobile, and on freight cars coupled to it, comes from a 33-cu. ft. LeRoi-Westinghouse compressor. This unit supplies two 10.5-cu. ft. reservoirs—one for regular use, one a reserve tank for emergencies.

Operator works in big, roomy, stand-up height cab. There's a seat on either side, one facing front, the other to the rear. Operator has 180° vision both ways. Single set of simple controls turns on center post, swings in half circle to either operating position.

#### Get all the facts

For fast yard-switching service...for ample car-handling power with rubber-tired off-track mobility...investigate SwitchMobile. Ask for specifications.

SwitchMobile—Trademark SM-1138-RR-z

**LeTourneau-WESTINGHOUSE Company**

Railroad Sales Division

Pearl, Illinois

A Subsidiary of Westinghouse Air Brake Company



# There's a SIMPLEX JACK to Do Every RAILROAD JOB Faster-Easier



## Fast Acting TRACK JACKS

15 ton capacity. The jacks set much more firmly and stand straighter under tie (without damage) or rail, due to large area toe lifts. Trip from either side. Two models have light weight aluminum housings.

ALSO: Tie removers and replacers.



## Standard Speed BRIDGE JACK

The new A2515 25-ton jack has an aluminum alloy housing, which weighs only 40 pounds. 9-in. lift eliminates re-setting in bridge work. Recommended for use with jack support.

ALSO: A complete line of hydraulic jacks and pullers.



## Ratchet Lowering LEVER JACKS

Ideal for lining, shimming, painting, replacing timber decks, pulling headed bolts ( $\frac{1}{2}$ " to  $\frac{7}{8}$ ") etc. Available with  $3\frac{1}{4}$ " or 5" wide base for use between ties on trestles. Equipped with a 5' chain fitted with a grab hook on one end and a bolt puller on the other.

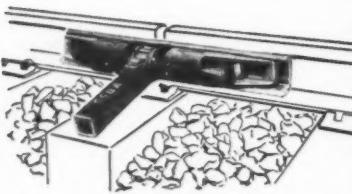
ALSO: Push and pull jacks for piling.



## Time-Saving TIE SPACER

Straightens, Spacing Ties. Pumps Rails. Easily applied and removed. Slides along top of rails.

## RAIL EXPANDERS for the Maintenance and Signal Departments



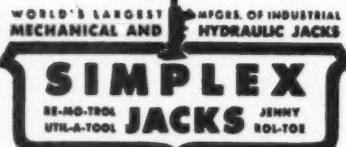
Permits one man to replace a rail pounding crew! For lining crossings and switches, pushing or pulling continuous rail, controlling expansion or contraction with no interruption of service. With lever socket locked down, nothing protrudes above rail head.

## Pole Pulling and Straightening Jacks for the Signal Department



Two sizes, 5 and 15 tons for pulling or straightening all sizes of poles. Pivots on base, when desired, to any angle. Can also be used for guy wire tightening or for pulling underground cable. Model A1538—15-ton capacity—available with aluminum housing which reduces weight 35 pounds.

ALSO: Cable Reel Jacks for drums 30- to 96-in. diameter.



Write for Details  
in Bulletin RR 55

TEMPLETON, KENLY & CO. • 2543 Gardner Road, Broadview, Illinois

## The Month's News

### Railway Personnel

#### General

**P. G. Shepherd**, assistant to the general manager on the Chesapeake & Ohio at Richmond, Va., and an engineer by training and experience, has been named assistant to the regional manager, Central region, at Huntington, W. Va.

**E. L. Morrison, Jr.**, general superintendent of computer application on the Chesapeake & Ohio at Richmond, Va., and an engineer through training and experience, has been appointed assistant regional manager of the road's Central region, with headquarters at Huntington, W. Va.

#### Engineering

**H. W. Kellogg**, engineer of track on the Chesapeake & Ohio at Detroit, Mich., has been promoted to assistant chief engineer—maintenance and construction—with headquarters at Richmond, Va.

**C. B. Porter**, assistant to the vice-president on the Chesapeake & Ohio at Huntington, W. Va., has been named assistant chief engineer—maintenance and construction—with headquarters at Detroit, Mich.

**R. J. Salow**, assistant supervisor of track on the Chesapeake & Ohio, has been promoted to chief draftsman with headquarters at Detroit, Mich.

**Ray M. Smith**, district engineer on the western district of the Missouri Pacific at Kansas City Mo., has retired. **T. O. Manion**, division engineer of the Arkansas division at Little Rock, Ark., succeeds Mr. Smith.

**C. M. Strawhun**, division engineer at Poplar Bluffs, Ark., has been transferred to Little Rock, replacing Mr. Manion. **R. J. Bruce**, assistant engineer, St. Louis Terminal and Illinois divisions, has been promoted to division engineer of the St. Louis terminal and Illinois divisions and the Missouri-Illinois Railroad east of the Mississippi river at St. Louis, succeeding **W. E. Laird**, who has been transferred to Poplar Bluff, replacing Mr. Strawhun.

Four assistant engineers in the engineering department of the Norfolk & Western have been promoted to the position of division engineer: **Edward H. Roth**, with headquarters at Roanoke, Va.; **L. A. Durham, Jr.**, at Bluefield, Va.; **J. S. Felton, Jr.**, located at Norfolk; and **W. I. King**, who makes his headquarters at Portsmouth, Ohio. All four men retain the headquarters they had while serving in the capacity of assistant engineers.

**J. F. Scheumack**, assistant division engineer on the Southern Pacific at Houston, has been promoted to division engineer at San Antonio succeeding **H. A.**

# THE SYMBOL OF STRENGTH



One of the important features of the Improved Fair is its rugged construction. It firmly grips the rail; it holds; it withstands all stresses and provides effective service for many years.

THE P. & M. CO.

CHICAGO • NEW YORK • DENVER • ST. LOUIS • BOSTON • ST. PAUL • WASHINGTON • SAN FRANCISCO • MEXICO CITY



#### GASOLINE AND LPG ENGINES

Model	Cyl.	Bore	Stroke	Displ.	Barrel Engine H.P.
N56	4	2 1/4	3 1/4	56	14.4 @ 2200 RPM
N62	4	2 1/4	3 1/4	62	15.3 @ 2200 RPM
Y69	4	2 1/2	3 1/4	69	21.4 @ 2400 RPM
Y91	4	2 1/2	3 1/4	91	28.5 @ 2400 RPM
Y112	4	3 1/4	3 1/4	112	32.0 @ 2400 RPM
F124	4	3	4 1/2	124	36.5 @ 2400 RPM
F140	4	3 1/4	4 1/2	140	42.0 @ 2400 RPM
F162	4	3 1/4	4 1/2	162	49.0 @ 2400 RPM
F186	6	3	4 1/2	186	60.5 @ 2400 RPM
F209	6	3 1/4	4 1/2	209	68.0 @ 2400 RPM
F226	6	3 1/4	4 1/2	226	73.0 @ 2400 RPM
F244	6	3 1/4	4 1/2	244	79.0 @ 2400 RPM
M271	6	3 1/4	4 1/2	271	86.2 @ 2400 RPM
M290	6	3 1/4	4 1/2	290	92.2 @ 2400 RPM
M330	6	4	4 1/2	330	104.4 @ 2400 RPM
M363	6	4	4 1/2	363	128.9 @ 2800 RPM
B371	6	4 1/2	4 1/2	371	110.0 @ 2400 RPM
B427	6	4 1/2	4 1/2	427	127.0 @ 2400 RPM
G134	4	3 1/4	4 1/2	134	34.2 @ 2000 RPM
G157	4	3 1/4	4 1/2	157	40.0 @ 2000 RPM
E201	4	3 1/4	4 1/2	201	65.4 @ 2400 RPM
H227	4	3 1/4	5 1/2	227	54.0 @ 1800 RPM
H243	4	3 1/4	5 1/2	243	57.9 @ 1800 RPM
H260	4	3 1/4	5 1/2	260	62.0 @ 1800 RPM
H277	4	4	5 1/2	277	66.4 @ 1800 RPM
K363	6	4	4 1/2	363	123.0 @ 2400 RPM
J382	4	4 1/2	6	382	74.0 @ 1400 RPM
T371	6	4 1/2	4 1/2	371	119.0 @ 2400 RPM
T427	6	4 1/2	4 1/2	427	140.0 @ 2400 RPM
U501	6	4 1/2	5 1/2	501	159.0 @ 2400 RPM
R513	6	4 1/2	5 1/2	513	164.3 @ 2400 RPM
R572	6	4 1/2	5 1/2	572	182.4 @ 2400 RPM
R602	6	4 1/2	5 1/2	602	191.7 @ 2400 RPM
V603	8	4 1/2	4 1/2	603	220.0 @ 2800 RPM
S749	6	5 1/2	5 1/2	749	217.0 @ 2200 RPM
S820	6	5 1/2	5 1/2	820	237.0 @ 2200 RPM

\*Available for industrial applications only.



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6218 CEDAR SPRINGS ROAD, DALLAS 9, TEXAS • 1252 OAKLEIGH DRIVE, EAST POINT (ATLANTA) GA.

#### Railway Personnel (Cont'd)

Hunt, whose promotion to assistant chief engineer at Houston was recently announced (RT&S, Sept., p. 96).

J. E. Barron has been promoted to assistant structural engineer on the Nickel Plate with headquarters at Cleveland, Ohio.

L. H. Laffoley, engineer of buildings on the Canadian Pacific at Montreal, has been appointed engineer of hotels. G. A. Morrison, assistant engineer in the chief engineer's office, has been promoted to assistant engineer of buildings at Montreal, succeeding J. G. Sutherland who, in turn, has been promoted to engineer of buildings succeeding Mr. Laffoley.

W. E. Axcell, division engineer on the Santa Fe at Marceline, Mo., has been promoted to district engineer of the eastern district, eastern lines with headquarters at Topeka, Kan. Mr. Axcell succeeds H. E. Wilson, whose promotion to chief engineer of the eastern lines was recently announced (RT&S, Sept., p. 96).

T. E. Dolphin, whose promotion to assistant division engineer on the Canadian National at Port Arthur, Ont., was recently announced (RT&S, Aug., p. 56), was born March 23, 1928, at Prince Albert, Sask. Upon graduation from the University of Saskatchewan in 1950, he joined the CNR as an instrumentman at Edmonton, Alta. He served consecutively in that capacity at Terrace, B. C., and Sherridon, Man., until April 1952. On the latter date he was named resident engineer, construction, at Sherridon and in October 1953 was appointed assistant engineer at Winnipeg, Man.—the position he held at the time of his recent promotion.

R. D. Nelson, whose promotion to division engineer on the Chicago & North Western at Sioux City, Iowa, was recently announced (RT&S, Sept., p. 101), graduated from the University of Illinois and served as an ensign in the Naval Reserve before joining the North Western at Boone, Iowa, in 1946 as a rodman. He was subsequently promoted to instrumentman, serving on the Iowa, Illinois and South Dakota lines of the road. In 1953 he was named assistant engineer on the Iowa division and was later transferred to St. Paul, Minn. At the time of his recent promotion Mr. Nelson was serving as assistant engineer at Boone.

I. N. Wigle, division engineer on the New York Central at Columbus, Ohio, has been named engineer maintenance of way of the Toronto, Hamilton & Buffalo.

Mr. Wigle was born at Hamilton, Ont., January 24, 1922, and received his B.S. degree in civil engineering from Queens University in 1943. He joined the New York Central in that year as an instrumentman and in 1945 was promoted to assistant engineer. From 1951 to 1953 he served as assistant supervisor of track—in the latter year being promoted to bridge inspector and bridge and building supervisor. On January 1, 1956, he was named assistant division engineer at Co-

(Continued on page 71)

# LOWER MAINTENANCE COSTS ALL THE WAY...



**Amcreco**  
*Lovry Process*  
Creosoted  
Products

**Bridge Timbers**

**Adzed and Bored Cross Ties**

**Poles**

**Plank**

**Pressure treated for  
Strength that lasts!**

## with AMCRECO Creosoted Products

Long service life with minimum maintenance—that's how Amcreco quality products reduce maintenance-of-way costs to the lowest possible level. Amcreco cross ties, bridge timbers, poles and plank last longer with greater strength because they are pressure treated in creosote by experienced Amcreco methods.

Start now and lower your maintenance-of-way costs by taking advantage of our nearly half a century of wood treating experience. Call your nearby Amcreco sales office for positive information on maintenance cost reduction.

### AMERICAN CREOSOTING CORPORATION

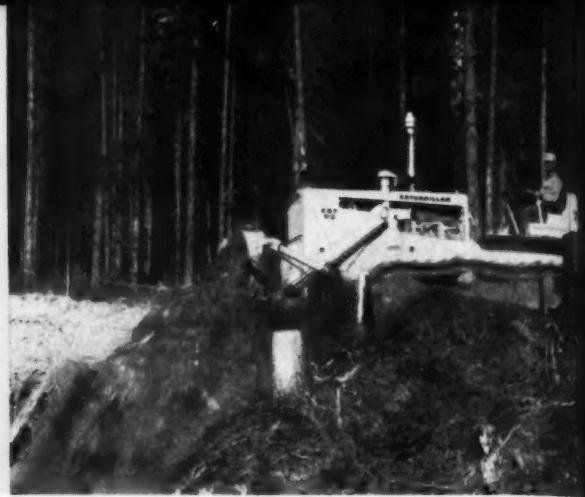
Colonial Creosoting Company  
Federal Creosoting Company  
Indiana Creosoting Company



Gulf States Creosoting Company  
Georgia Creosoting Company  
Kколо River Company

Georgia Forest Products Company  
GENERAL OFFICES: LOUISVILLE 2, KENTUCKY

# Preparing right-of-way the modern way



## WITH NEW, IMPROVED D8s



General Construction Co., Vancouver, put its two new CAT\* D8 Tractors to work building a 19-mile section of railroad in the clay gumbo and silt of the British Columbia wilderness. They were used for clearing, building 18-foot roadway and push-loading big, efficient DW21 Tractors and Scrapers.

The contractor reports he is particularly pleased with the oil clutches and the longer tracks of the D8s. The oil clutch on the new D8 (Series E) greatly increases work life of the machines since a constant oil bath lubrication reduces wear on all moving parts. Very little maintenance or external lubrication is required.

And the track roller frames now have seven rollers improving flotation and control of dozing. In addition, track shoes are hardened by a "water-quench" process to increase life of grousers and other wearing surfaces.

The powerful new D8 (you have a choice of oil clutch or torque converter) has been designed from the ground up for a long, productive life on difficult railroad jobs.

There now is 191 HP in its new engine, which also features a new fuel injection system, new governor, new fuel filter, new water pump, new oil cooler and new larger radiator. There is a constant power drive for power controls, in-seat starting and convenient controls with hydraulic booster.

The new D8 has created a new concept of "a day's work." It will increase your production, lower your costs. Call your Caterpillar Dealer today. Ask him for a demonstration—on *your* job.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

# CATERPILLAR\*

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NAME THE DATE...  
YOUR DEALER  
WILL DEMONSTRATE

## Railway Personnel (Cont'd)

lumbus—the position he held prior to his recent appointment.

**Frederick A. Ingalls**, whose promotion to resident engineer on the Boston & Maine, at Boston, was recently announced (RT&S, Aug., p. 60) was born April 7, 1917, at Reading, Mass. He attended Lincoln Technical Institute and in October 1945 joined the Boston & Maine as assistant bridge inspector at Boston. The following year he was named steel inspector and in 1945 became a structural draftsman in the road's Boston office. In 1951 he was named structural designer and in 1954 was promoted to assistant engineer. In February 1955 he was named assistant supervisor of bridges and buildings on the Terminal division at Boston—the position he held prior to his recent promotion.

**Earle F. Kidder**, whose retirement as division engineer on the Union Pacific at Portland, Ore., was recently announced (RT&S, Aug., p. 52) was born February 4, 1888, at Baker, Ore. He attended the University of Oregon and in April 1910 joined the Southern Pacific as a chainman. After serving as rodman, instrumentman and draftsman, he joined the UP in September 1912 as an assistant engineer at Portland. He served successively as bridge and building supervisor at Portland, division engineer at Walla Walla, Wash., and Spokane and, in September 1931, was named assistant division engineer and roadway clerk at Spokane. In August 1934 he was named roadmaster at Walla Walla and in January 1937 was promoted to division engineer at Spokane. In April 1939 he was named assistant engineer at Hood River, Ore.—serving in that same capacity at Omaha, Neb., until December 1940 when he was named division engineer at Spokane—the position he held at the time of his recent retirement.

**Donald H. Eckford**, whose promotion to division engineer on the Canadian National at Edson, Alta., was recently announced (RT&S, Aug., p. 56), was born March 17, 1923, at Kamsack, Sask. He received his degree in Civil Engineering from the University of Manitoba in 1950. From May 1950 until May 1953 he served as instrumentman at Prince Albert, Sask., and Regina. On the latter date he was promoted to junior assistant engineer at Regina. He held this position successively at Saskatoon, Sask., Kamloops, B. C., Saskatoon, Winnipeg, Man., and again at Regina until September 1955 when he was named assistant division engineer with headquarters at Port Arthur, Ont.—the position he held at the time of his recent promotion.

**Sidney W. George** whose promotion to division engineer on the Western Maryland at Cumberland, Md., was recently announced (RT&S, June, p. 68) was born May 17, 1924, at Baltimore, Md. After attending Bucknell University and the Georgia School of Technology, and after having served with the U. S. Marine

Corps, he joined the WM in May 1946. From this date until December 1950, he served as levelman, transitman, and instrumentman at Baltimore. After again serving with the Marine Corps from December 1950 until May 1952 he rejoined the WM on the latter date as an instrumentman in the chief engineer's office at Baltimore. In December of that year he was named senior draftsman and in November 1953 was promoted to chief draftsman. In July 1955 he was named office engineer in the chief engineer's office—the position he held prior to his recent promotion.

**Wendell Fields**, whose promotion to district engineer on the Missouri Pacific at Houston, Tex., was recently announced (RT&S, Aug., p. 52), was born February 25, 1890, at Wellsville, Mo. He attended Central Wesleyan College at Warrenton, Mo., and in October 1910 entered railway service with the Midland Valley as a rodman. From November 1911 to October 1912 he served as a rodman in Harris County, Tex., on the latter date joining the San Benito Land & Water Co., as an instrumentman. In October 1913 he joined the Missouri Pacific as a levelman at Kingsville, Tex., being promoted to instrumentman in April of the following year. In June 1917 he joined the Beaumont Shipbuilding & Dry Dock Co., as an assistant engineer and in October 1917 rejoined the Missouri Pacific as assistant engineer, at Houston. He served in the U. S. Army from February 1918 to August 1919, returning to the Missouri Pacific on the latter date as assistant engineer at Houston. He served subsequently as roadmaster at Kingsville, Tex., division engineer at San Antonio, Tex., office engineer at Houston and division engineer at Palestine, Tex.—the latter position held at the time of his recent promotion.

**Paul K. Cruckshank**, whose promotion to assistant division engineer on the New York Central at Columbus, Ohio, was recently announced (RT&S, Sept., p. 96), was born September 25, 1923, at Cambridge, Mass. He graduated from the Civil Engineering school of the Massachusetts Institute of Technology in 1948 and entered the service of the NYC as a draftsman at Boston. He was named assistant engineer at Boston the following year and, in 1953, was appointed assistant supervisor of track at Ramsen, N. Y. From August 1954 until February 1956, he did special committee work and served as general track inspector at New York City. On the latter date he was promoted to assistant engineer, CTC, with headquarters at Boston—the position he held at the time of his recent promotion.

### Track

**T. C. Herndon**, whose promotion to roadmaster on the Charleston & Western Carolina at Augusta, Ga., was recently announced (RT&S, Aug., p. 58) was born October 23, 1924, at Rembert, S. C. He attended Georgia Tech and on January 4, 1951, entered railway service with the C&WC. Prior to 1951 he had

served with the Georgia State Highway Department.

**Russell T. Fleshman**, whose promotion to supervisor of track on the Chesapeake & Ohio at Rainelle, W. Va., was recently announced (RT&S, Aug., p. 58), was born September 1, 1909, at East Rainelle. He joined the C&O on April 16, 1928, as a track laborer and in 1944 joined the Agnew Construction Company as general foreman. In 1948 he rejoined the C&O and served as extra force foreman and section foreman at various locations on the NF&G—prior to his recent promotion.

**L. O. Scallion**, whose promotion to track supervisor on the Illinois Central at Princeton, Ky., was recently announced (RT&S, Aug., p. 58) was born February 26, 1909, at Jackson, Tenn. He entered railroad service with the Illinois Central on June 20, 1935, as a section laborer, and on April 21, 1941, was promoted to section foreman at Ripley, Tenn. He was named general foreman at Paducah, Ky., on Feb. 1, 1952—the position he held at the time of his recent promotion.

**E. W. Wotipka**, whose promotion to roadmaster on the Denver & Rio Grande Western at Salida, Colo., was recently announced (RT&S, Aug., p. 58) was born July 31, 1923, at Newark, N. J. He worked summers as rodman and draftsman for the Southern Pacific at El Paso, Tex., while attending the Texas College of Mines & Metallurgy from which he graduated in 1949. He joined the Denver & Rio Grande Western in June 1952 as an instrumentman at Grand Junction, Colo., and in September of the following year was promoted to office engineer. In November 1954 he was named track inspector at Pueblo, Colo., the position he held prior to his recent promotion.

**Thomas O. Hassett**, whose promotion to track supervisor on the Central of Georgia at Union Springs, Ala., was recently announced (RT&S, Sept., p. 104), was born April 11, 1926, at Vincent, Ala. He joined the Atlantic Coast Line in 1948, serving as apprentice foreman, assistant foreman and section foreman until August 1, 1950, when he joined the C of Ga. He served as apprentice foreman and section foreman until September 1, 1955, when he was promoted to apprentice track supervisor at Columbus, Ga. In May 1956 he was named supervisor in charge of mechanized rail laying and surfacing gangs for the system—the position held prior to his recent promotion.

**Herbert J. Lieser**, roadmaster on the Belt Railway of Chicago, has been appointed supervisor of bridges and buildings on the Chicago & Western Indiana, with headquarters at Chicago. Mr. Lieser succeeds **J. Ebens**, deceased. **William L. Termunde**, general foreman of bridges and buildings, on the Belt Railway of Chicago, has been appointed roadmaster succeeding Mr. Lieser. **James A. Schultz** succeeds Mr. Termunde, with headquarters at Clearing, Ill.

## Railway Personnel (Cont'd)

### Special

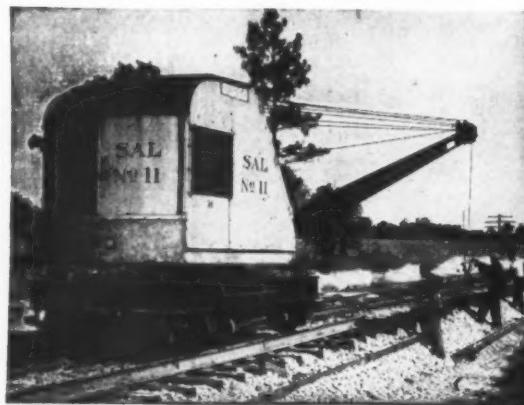
L. F. Schrader, whose appointment as supervisor of maintenance equipment on the New York Central at Cleveland, Ohio, was recently announced (RT&S. Aug., p. 64), was born June 7, 1919, at Oak Harbor, Ohio. He attended Toledo University and joined the New York Central on April 16, 1937, as a track laborer on the Cleveland division. In 1946 he was named assistant track foreman and section track foreman and the following year extra gang foreman. In

October 1951 he was promoted to assistant supervisor of track on the Cleveland division.

### Obituary

J. Ebbens, supervisor of bridges and buildings, on the Chicago & Western Indiana, at Chicago, died recently at the age of 43.

Emory Forrest Mitchell, who served as chief engineer of the Texas & Pacific from 1917 until 1931, died at the age of 91 in Dallas, Tex., after a brief illness. Since 1941, Mr. Mitchell had been active as a consulting engineer in Dallas.



We call Burro Cranes "Railroad Specialists" because they do so many railroad jobs so well. Track work, bridge work, bulk materials handling, Mechanical Stores Department, material handling with or without magnet, are only a few jobs Burro does with speed and economy. Burro Cranes are designed for railroad work—not adapted to it. Watch a Burro work and see why it's called on to do so many jobs by most of the country's railroads.

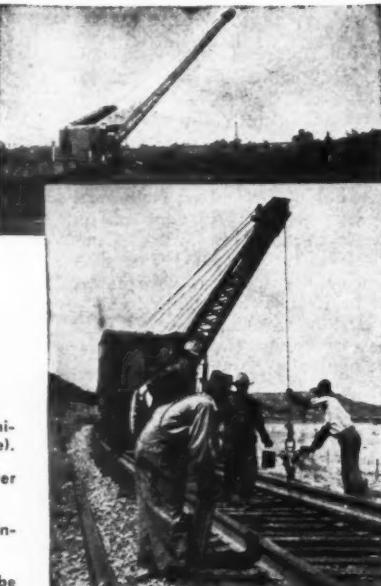
#### Only BURRO CRANES HAVE:

- Fast travel speeds—up to 22 M.P.H.
- Draw Bar Pull of 7500 lbs. (often eliminates need for work train or locomotive).
- Elevated Boom Heels for working over high sided gondolas.
- Short tail swing—will not foul adjoining track.
- Low overall height—Burro can be loaded and worked on a standard flat car.

You are cordially invited to drop in at the Cullen-Friestdahl Hospitality Rooms—Conrad Hilton Hotel, during the conventions.

Write for Bulletins on Burro Cranes

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## Association News

### Maintenance of Way Club of Chicago

The club will start the current season with a dinner meeting on October 22 in the Hamilton Hotel, 20 S. Dearborn street, Chicago. The principal speaker will be L. C. Collister, manager treating plants, Santa Fe System, who will discuss the tie-treating practices of his road, with emphasis on recent developments. Mr. Collister's remarks will be illustrated by slides.

### Mississippi Valley Maintenance of Way Club

The first meeting of the 1956-1957 season was held at the Hotel Coronado, St. Louis, Monday, September 10. Speaker for the evening was G. M. Magie, director of engineering research, AAR, who spoke on "Maintenance of

### Meetings and Conventions

American Railway Bridge and Building Association—Elise LaChance, Secretary, 431 S. Dearborn street, Chicago 5.

American Railway Engineering Association—Annual Meeting, March 4-6, 1957, Hotel Sheraton Jefferson, St. Louis, Mo. Neal D. Howard, Secretary, 59 E. Van Buren street, Chicago 5.

American Wood-Preservers' Association—Annual Meeting, April 29-May 1, 1957, Conrad Hilton Hotel, Chicago. W. A. Penrose, Secretary-treasurer, 839 Seventeenth street, N. W., Washington 6, D. C.

Bridge and Building Supply Association—L. R. Gurley, Secretary, 201 North Wells street, Chicago 6.

Maintenance of Way Club of Chicago—Next meeting, October 22. S. F. Kosco, Secretary-treasurer, 135 E. 11th Place, Chicago 5.

Metropolitan Maintenance of Way Club—G. Rogers, Secretary-treasurer, 30 Church street, New York.

Mississippi Valley Maintenance of Way Club—Next meeting, October 15, 1956, Coronado Hotel, St. Louis, Mo. R. B. Davis, Secretary-treasurer, Room 1025, Frisco Building, 906 Olive street, St. Louis 1, Mo.

National Railway Appliances Association—J. B. Templeton, Secretary, 1020 So. Central avenue, Chicago 44; Lewis Thomas, Assistant Secretary, 59 East Van Buren street, Chicago 5.

Railway Tie Association—Annual meeting, October 25-27, 1956, Hotel Roanoke, Roanoke, Va. Roy M. Edmonds, Secretary-treasurer, 1221 Locust street, St. Louis 3, Mo.

Roadmasters' and Maintenance of Way Association of America—Elise LaChance, Secretary, 431 S. Dearborn street, Chicago 5.

Track Supply Association—Lewis Thomas, Secretary, 59 E. Van Buren street, Chicago 5.

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“ONE MAN GANG”**  
**100% Self-Contained  
SYNTRON  
GASOLINE  
HAMMER**



**ROCK  
DRILLS**

For high-speed drilling in rock to depths of 13 ft. at rate of 2 ft. per minute. Automatic rotation of drill steels. Cleans dust and cuttings out of hole.

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2400 powerful blows per minute do a better job and reduce job-time and fatigue, busting concrete, cutting asphalt, digging frozen ground or tamping backfill.



**SPIKE  
DRIVER**

For driving cut spikes into treated railroad ties, the SD-55 is equipped with a special nose piece and spike centering tool.



Syntron Gasoline Hammers don't need auxiliary power equipment — batteries and cables or air compressors. One man operation. Delivering 2,000 powerful blows per minute, these Syntron Gasoline Hammers reduce job time and costs.

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**SYNTRON COMPANY**

250 Lexington Ave., Homer City, Pa.

Way and Structures Development at the AAR Research Center." Attendance at the meeting was 176.

The October meeting of the Club will be held at the Hotel Coronado on October 15, and will feature an address by R. B. Radkey, engineer ties and treatment, Illinois Central, on "When Should a Crosstie Be Renewed?"

**Track Supply Association**

The annual meeting of the association was held at the Coliseum, Chicago, on September 19. W. A. Maxwell (Ramapo Ajax Division, American Brake Shoe Company), presided as president. In the election of officers, A. J. Reading (Chipman Chemical Company, Inc.) was advanced from first vice-president to president; W. B. Blix (Nordberg Manufacturing Company) was moved up from second vice-president to first vice-president; R. T. Johnson (Mid-West Forging & Manufacturing Company), a director of the association, was elected second vice-president; and Lewis Thomas (The Q&C Co.) was re-elected secretary-treasurer. Directors elected for a two-year term are: C. L. Rager (Fairmont Railway Motors, Inc.); P. J. Wolf (Maintenance Equipment Company); and M. H. Dick (Railway Track & Structures). J. L. Beven (Mall Tool Co., Inc., Division of Remington Arms Co., Inc.) was re-elected a director.

**American Railway  
Engineering Association**

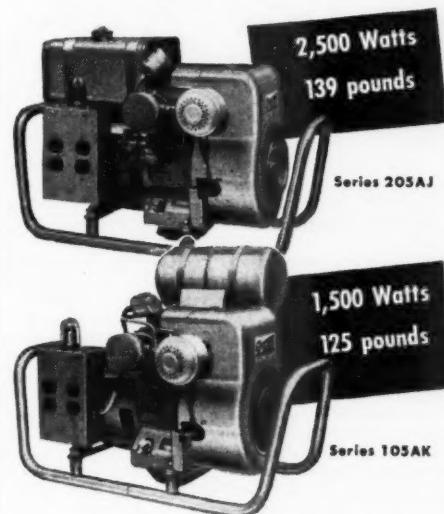
The following committees have scheduled meetings to be held during the month of October: Committee 15—Iron & Steel Structures—will meet October 24-25 at Cincinnati, Ohio; Committee 17—Wood Preservation—will meet October 24 at the Hotel Roanoke, Roanoke, Va.; Committee 24—Cooperative Relations With Universities—will meet October 26 at the Illinois Institute of Technology at Chicago; Committee 29—Waterproofing—will meet October 3 at Association headquarters at Chicago; and, Committee 7—Wood Bridges & Trestles—will meet October 1-2 at the Shoreham Hotel, Washington, D. C. An inspection trip will be made to the Timber Engineering Company's plant at Alexandria, Va.

**Railway Tie Association**

The 38th annual convention of the association will be held at the Hotel Roanoke, Va., October 25, 26 and 27. The principal address to the convention will be made by R. H. Smith, president of the Norfolk & Western. The annual president's reception will be held on the evening of Thursday, October 26, and the annual dinner will be held on the next evening at 7:30 p.m., at which there will be entertainment and dancing.

For the ladies there will be a tour of

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Other models to 50,000 watts.

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## Association News (Cont'd)

historic Virginia, including Washington & Lee College, and the Lee Chapel.

At the opening meeting on October 25, W. J. Hedley, assistant chief engineer of the Wabash, will speak on "Crossties Yesterday, Today and Tomorrow." C. E. Swanson, assistant general purchasing agent, Burlington, will speak on "Railroad Tie Procurement—Past and Present." "A Railroad Thinks Out Its Future," is the title of an address to be given by W. R. Elsey, vice-president, purchase, stores & insurance, Pennsylvania. L. A. Loggins, chief engineer, Southern Pacific Lines in Texas & Louisi-

ana, will speak on "Tie Procurement Practices and Policies of the Southern Pacific Co."

"The Santa Fe Study of Causes of Tie Failure," will be the subject of an address to be delivered by T. A. Blair, chief engineer, system, Atchison, Topeka & Santa Fe. The final address on Thursday will be delivered by G. E. Getty assistant vice-president, Bureau of Railway Economics, AAR, who will speak on "Factors Affecting Railroad Maintenance Expenditures."

Addresses to be presented at the meeting on Friday, October 26, include: "Boston & Maine Experiences Less Frequent Crosstie Renewals Through Incising," to be delivered by E. R. Rand, tie

and timber agent, Boston & Maine; "The Crosstie of the Future," by G. M. Magee, director of engineering research, AAR; and, "The Indispensable Cross Tie," by R. H. Smith, President, Norfolk & Western. Friday afternoon a trip will be conducted to the wood treating plant of the Koppers Company near Salem, Va.

## Supply Trade News

### General

The American Brake Shoe Company has announced that the Denison Engineering Company, with main offices at Columbus, Ohio—a wholly owned subsidiary since June 1955—has become a division of the company. No change of personnel is involved in the move.

The DeVilbiss Company has announced the expansion and relocation of its direct factory branch at Dallas, Texas, to be completed about November 1. The new facility will be located on Irving Blvd., a main artery between Dallas and Fort Worth, and will have double the area of the present location at 1515 Dragon street, Dallas.

The Clark Equipment Company has announced that it has moved its service school, formerly located in Jackson, Mich., to completely new quarters at the Material Handling Development center at Battle Creek, Mich.

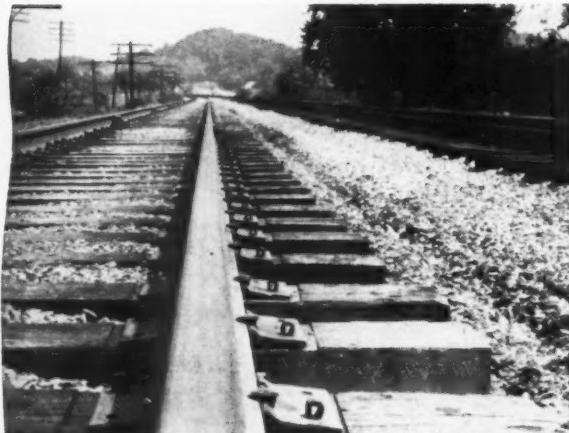
### Personal

R. H. Cline, manager of the Allis-Chalmer Manufacturing Company's Charlotte district, has been transferred in that capacity to the Pittsburgh district succeeding J. K. Keogh.

C. C. Turner has joined the Railroad Sales Division of the Rust-Oleum Corpo-

## USE TIE PLATE LOCK SPIKES

for Minimum Annual Cost  
of Ties in Track



- hold gage
- prolong life of ties
- save maintenance expense

LOCK SPIKES hold tie plates firmly in place on cross-ties and bridge timbers. They are quickly and easily driven, or removed, with standard track tools. Driven to refusal, the spread shank is compressed by the walls of the hole. Tie plates are held against horizontal and vertical movement under spring pressure. Play between the spike and the hole is eliminated—gage is held and plate cutting is overcome.

LOCK SPIKES not only become integral with the tie plate, but also the lateral pressure by the legs against the sides of the tie hole, binds the spike in the tie. This unique feature gives tight adhesion between tie and plate.

LOCK SPIKES were first installed in 1947. Since they have been in track, no maintenance whatever has been required. Cost of installing in track is low and comparable to cut spikes. The advantages and saving only found in Lock Spikes reduces the annual cost of ties in track and maintenance expense to a minimum. We invite your investigation.

**BERNUTH, LEMBCKE CO., INC.**  
420 Lexington Avenue, New York 17, N. Y.



R. Floyd McCall has been appointed vice-president and manager of railroad radio products sales of Motorola Communications and Electronics, Inc., Chicago.



Leslie W. Boyer, formerly sales manager of the Indianapolis district of the creosoted products division of the Republic Creosoting Company, who has been promoted to sales manager of this division with headquarters at Indianapolis, Ind.

ration. Mr. Turner has served with the Union Pacific and has spent a number of years in the railway supply business, including a period of service with the Superheater Company. He will make his headquarters at Omaha, Neb.

S. A. Rishovd, vice-president in charge of sales and engineering for the Northwestern Motor Company, has been promoted to vice-president and general manager in charge of sales and engineering.

John Kott, Jr. assistant sales manager for the J. H. Holan Corporation, has been promoted to sales manager with headquarters at Cleveland, Ohio.

Harold Ford, has been appointed district sales manager for the L. B. Foster Company, with headquarters at the firm's new offices at 795 Peachtree Street, Atlanta, Ga.

M. Cleighton Hilbert, plant manager of Crescent Industries at Chicago, has



Clifford B. Bronson, formerly assistant chief engineer, maintenance of way, system, for the New York Central, has been named engineering consultant to the New York office of the L. B. Foster Company.

been named general manager of the Duff Norton Company's Coffing Hoist division at Danville, Ill.

Edward T. Coon, sales representative for the Dow Chemical Company, has been promoted to product manager of industrial herbicides in the firm's agricultural chemical sales department.

Lloyd L. Fusby has been named western manager and Roger W. Hinchman general sales manager of the Pacific Coast Borax Company division of the United States Borax & Chemical Corporation. Mr. Fusby, formerly production manager of the firm's Boron Plant, will continue to make his headquarters at

Los Angeles. Mr. Hinchman, former eastern industrial sales manager, will remain in the division's headquarters in New York.

Richard M. Ervin has been named manager of the Washington, D. C. office of the Hyster Company and district manager of the firm's east central industrial truck division. Mr. Ervin succeeds Robert E. Lange, who will become resident manager of the Hyster subsidiary plant which will open in Sao Paulo, Brazil.

Robert A. Fletcher and L. Kenneth Bliss have been appointed district representatives for the Eastern division of the tractor sales department.

# WHEN IT COMES TO SERVICE

## COME TO REILLY

Ed Goodman is Southwestern District Manager. Through his office at Granite City (greater St. Louis) pressure treaters in ten southwestern states are served with good Reilly Coal Tar Creosote. Ed sells Creosote and renders a fine service to his customers.



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## Helps From Manufacturers

The following compilation of literature —including pamphlets and data sheets—is offered free to railroad men by manufacturers to the railroad industry. To receive the desired information, write direct to the manufacturer.

**MOTOR SCRAPERS.** A 16-page, two-color catalog, MS-1105, has recently been made available describing the design, engineering, construction and operating features of the TS-260 motor scraper. In addition to presenting specifications, the catalog illustrates many of the machines' features with photographs. (Write: Tractor Group, Dept. RTS, Allis-Chalmers Mfg. Co., Milwaukee, Wis.)

**TRACTOR SHOVELS.** Structural features of the HD-6G diesel-powered tractor shovel are discussed and the shovel hydraulic system reviewed in a new 2-color, 8-page catalog recently made available. Photographs, drawings and charts depict the manufacturer's claims and show the features built into the units for operator comfort and safety. Also included are complete specifications and listings of the interchangeable matched attachments designed for the HD-6G. (Write: Construction Machinery Division, Dept. RTS, Allis-Chalmers Manufacturing Company, Milwaukee, Wis.)

**HEAVY-DUTY TRUCKS.** A new 20-page catalog is now available containing complete information on International four-wheel conventional and cab-over-engine heavy-duty trucks with six-cylinder engines. Gasoline, liquefied petroleum gas and diesel-powered models are discussed in the 2-color booklet. Presented are specifications, design and operating features of the four-wheel R line and CO models, as well as straight trucks and truck tractors including the R-185, R-190, R-200, R-210, R-220, CO-180, CO-190, CO-200, and CO-220 series. (Write: Consumer Relations Dept., Dept. RTS, International Harvester Company, 180 N. Michigan Ave., Chicago 1, Ill.)

**PROTECTIVE COATINGS.** A paint manual entitled, "Tygon Protective Coatings Bulletin #760," has recently been made available. Designed for use as a practical workbook, the 30-page manual presents useful painting data in the form of charts, tables, diagrams and illustrations. Information is also given on surface preparation, priming, application instructions and methods of maintenance. Care and cleaning of brushes and spray equipment is also explained. Limitations of each type coating are given together with cost factors relating to specialized coatings. (Write: Robert Hartenstein, Plastics and Synthetics Division, Dept. RTS, U. S. Stoneware Company, Akron 9, Ohio.)

**COMPRESSOR MAINTENANCE.** A booklet to help locate and correct common air-cooled and water-cooled compressor troubles has recently been released. The booklet contains a cartoon sequence which pictures a full description of compressor troubles ranging from failure to deliver air to excessive consumption of oil. (Write: Worthington Corporation, Merchandising Sales Department, Dept. RTS, Harrison, N. J.)

## Q AND C CLAMPS ASSURE SAFETY



The Q and C Universal Guard Rail Clamp provides a strong and safe means for holding the Guard Rail against the thrusts of heavy traffic.

The Universal design of the drop forged heat treated steel yoke permits its use over a large range of rail sections which simplifies and reduces store room stocks.

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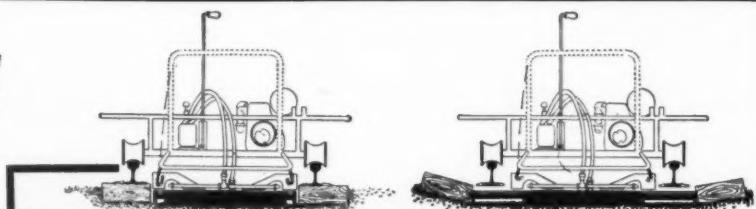
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**NO MORE JACKING UP TRACK!**

**This WOOLERY  
TIE-REMOVING TEAM**

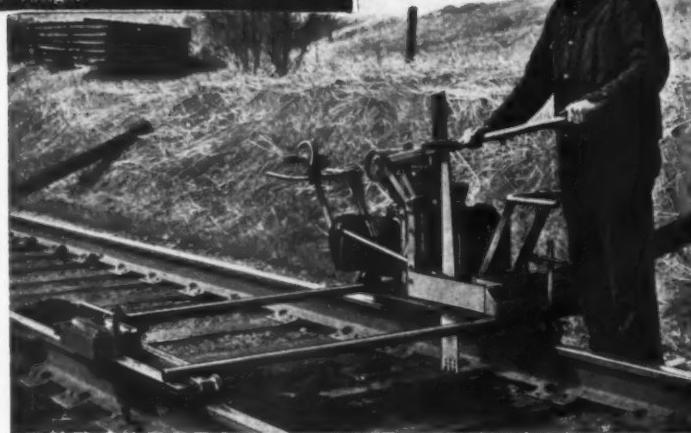
**NOW ELIMINATES SLOW,  
COSTLY METHOD**

After the tie has been cut on both sides by the WOOLERY Tie Cutter, the operator of the Tie-end Remover—(who follows closely behind so that operators can assist each other in removing machines from track)—lifts the center section out with tie tongs.



A double-ended hydraulic cylinder is then lowered into the tie bed. A simple turn of the valve moves these two pistons outward, pushing the tie-ends completely clear of the rail—whether

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Use the WOOLERY TIE-END REMOVER in conjunction with the improved model NU WOOLERY TIE CUTTER! It's the perfect team for greater savings on tie renewals—and gives smoother, safer track, too!

For highest efficiency two Tie Cutters should be used ahead of one Tie End Remover.

The trend toward heavier rail and double shoulder tie plates has made removing tie-ends increasingly difficult. With the WOOLERY Tie-end Remover, this task can now be done in less than a minute by one man with no more effort than that required to turn a valve!

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## Advertisers IN THIS ISSUE

<b>A</b>	<b>B</b>	<b>C</b>
Air Reduction Company, Incorporated Allis-Chalmers Tractor Division ..... 15	Bernuth, Lembeke Company, Inc. .... 74	Caterpillar Tractor Co. .... 70
American Creosoting Corporation ... 69	Bethlehem Steel Company ..... 1	Chicago Pneumatic ..... 55
Armeo Drainage & Metal Products, Inc. .... 12	Bird & Son, Inc. .... 13	Chipman Chemical Company ..... 22
Blaw-Knox Company ..... 62	Bumpers, Inc. .... 61	Columbia-Geneva Steel Division, U. S. Steel Corp. .... 16, 17
Continental Motors Corporation ..... 68	Cullen-Friestadt Company ..... 72	Dearborn Chemical Company ..... 33
D	E	Foster, L. B., Company ..... 61
Esso Standard Oil Company ..... 9	F	Fairmont Railway Motors, Inc. .... 34
G	H	Gardner-Denver Company ..... 26
Homelite Corporation ..... 31	I	Ingersoll-Rand ..... 32
Hyster Company ..... 1	J	Jackson Vibrators, Incorporated ..... 20
Ingersoll-Rand ..... 32	K	Kershaw Manufacturing Company, Incorporated ..... IFC
P, & M. Company ..... 67	L	Le Roi Company ..... 8
Plasser Railway Machinery Company ..... 2	M	LeTourneau-Westinghouse Company ..... 64, 65
Portland Cement Association ..... 4	N	Lewis Bolt & Nut Company ..... 14
Pullman-Standard Car Manufacturing Company ..... 59	O	Linde Air Products Company, Rail- road Department, a Division of Union Carbide & Carbon Corp. .... 21
Q & C Company, The ..... 77	P	Mall Tool Company ..... 58
Racine Hydraulics & Machinery, In- corporated ..... 23	Q	Mannix International Inc. .... 30
Rails Company, The ..... 28	R	Matisa Equipment Corp. .... 24
Railway Track-work Company ..... 28	S	Mid-West Forging & Manufacturing Company ..... 27
Ramapo Ajax Division, American Brake Shoe Company ..... 19	T	Mobile Office, Inc. .... 77
Reade Manufacturing Company, In- corporated ..... 19	U	National Aluminate Corporation ..... 3
Reilly Tar & Chemical Corporation .. 75	V	National Lock Washer Company ..... IBC
Speno, Frank, Railroad Ballast Clean- ing Co., Inc. ..... 10	W	Nordberg Manufacturing Company ..... 5
Standard Dry Wall Products, Inc. .... 60	X	Northwest Engineering Company ..... 57
Standard Oil Company of Indiana .. 36	Y	Onan, D. W. & Sons, Inc. .... 73
Syntron Company ..... 73	Z	Orton Crane & Shovel Co. .... 6
T	P	P. & M. Company ..... 67
Templeton, Kenly & Company ..... 66	Q	Plasser Railway Machinery Company ..... 2
Tennessee Coal & Iron Division, U. S. Steel Corp. ..... 16, 17	R	Portland Cement Association ..... 4
Tredegar Company ..... 58	S	Pullman-Standard Car Manufacturing Company ..... 59
True Temper, Railway Appliance Di- vision ..... 63	T	Western Railroad Supply Company .. 7
U	U	Woolery Machine Company ..... 78

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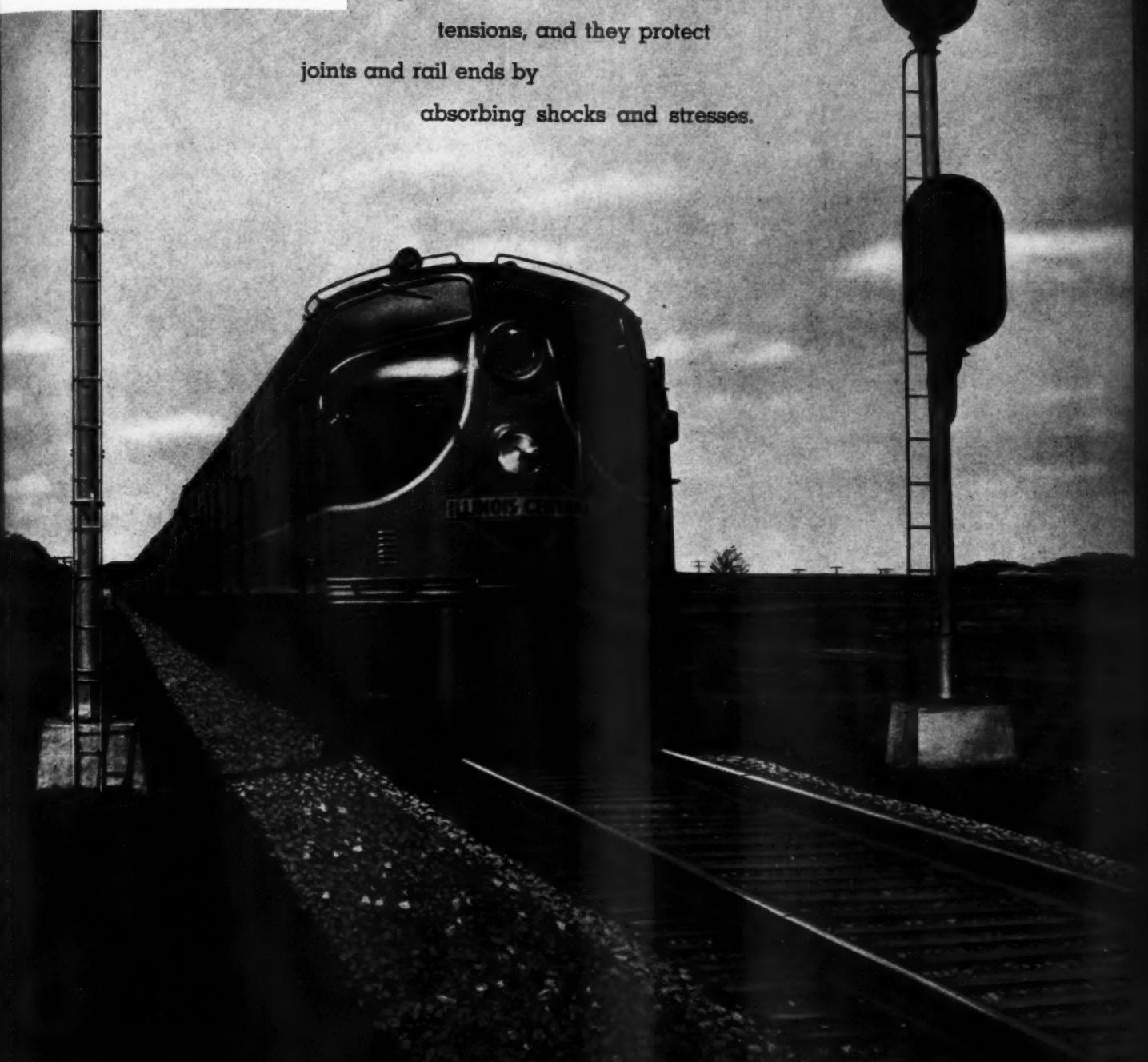


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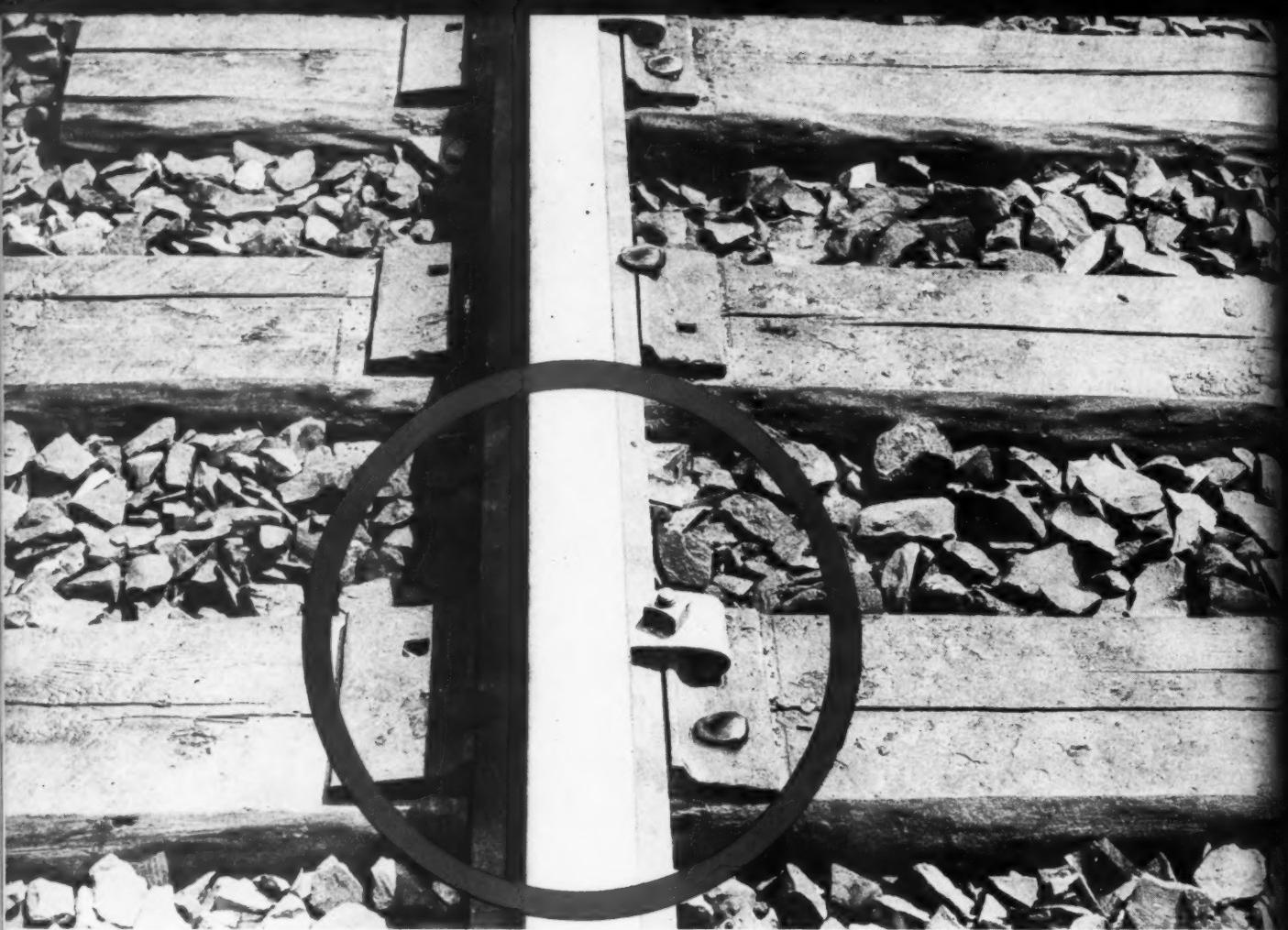
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A good way to reduce maintenance costs is to use our tremendously powerful railway spring washers.

They give enough reserve power to maintain bolt tensions, and they protect joints and rail ends by absorbing shocks and stresses.



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## **COMPRESSION ANCHORS ARE BETTER FOR MAINTAINING LINE AND GAGE . . .**

**WHY?** Because they hold the rail firmly to the outside shoulder of the tie plate—and close, uniform holding of the rail in the tie plate is highly important in maintaining line and gage. This in turn means better riding track—joints are held in line and spotty wheel flange wear is minimized. There is less wear and tear on ties, tie plate shoulders and rail.

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